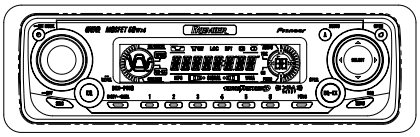
Pioneer *sound.vision.soul*

Service Manual



DEH-P350/XM/UC

ORDER NO.
CRT2984

MULTI-CD CONTROL HIGH POWER CD PLAYER WITH FM/AM TUNER

DEH-P350 XM/UC, XN/UC
DEH-P3500 XM/UC, XN/UC
DEH-P4550 XM/ES, XN/ES

COMPACT disc DIGITAL AUDIO

● This service manual should be used together with the following manual(s):

Model No.	Order No.	Mech. Module	Remarks
CX-3026	CRT2944	S10	CD Mech. Module:Circuit Description, Mech.Description, Disassembly

For details, refer to "Important symbols for good services".

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SAFETY INFORMATION

CAUTION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer.
Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING

This product contains lead in solder and certain electrical parts contain chemicals which are known to the state of California to cause cancer, birth defects or other reproductive harm.
Health & Safety Code Section 25249.6 - Proposition 65

[Important symbols for good services]
In this manual, the symbols shown-below indicate that adjustments, settings or cleaning should be made securely.
When you find the procedures bearing any of the symbols, be sure to fulfill them:

1. Product safety

You should conform to the regulations governing the product (safety, radio and noise, and other regulations), and should keep the safety during servicing by following the safety instructions described in this manual.

2. Adjustments

To keep the original performances of the product, optimum adjustments or specification confirmation is indispensable. In accordance with the procedures or instructions described in this manual, adjustments should be performed.

3. Cleaning

For optical pickups, tape-deck heads, lenses and mirrors used in projection monitors, and other parts requiring cleaning, proper cleaning should be performed to restore their performances.

4. Shipping mode and shipping screws

To protect the product from damages or failures that may be caused during transit, the shipping mode should be set or the shipping screws should be installed before shipping out in accordance with this manual, if necessary.

5. Lubricants, glues, and replacement parts

Appropriately applying grease or glue can maintain the product performances. But improper lubrication or applying glue may lead to failures or troubles in the product. By following the instructions in this manual, be sure to apply the prescribed grease or glue to proper portions by the appropriate amount.For replacement parts or tools, the prescribed ones should be used.

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● CD Player Service Precautions

1. Before disassembling the unit, be sure to turn off the power. Unplugging and plugging the connectors during power-on mode may damage the ICs inside the unit.
2. To protect the pickup unit from electrostatic discharge during serviving, take an appropriate treatment(shorting-solder) by referring to "the DISASSEMBLY" on page 49.
3. After replacing the pickup unit, be sure to check the grating.(See p.46.)

1. SPECIFICATIONS

● DEH-P350/XM/UC, DEH-P350/XN/UC

General

Power source ..... 14.4 V DC (10.8 – 15.1 V allowable)
Grounding system ..... Negative type
Max. current consumption ..... 10.0 A
Backup current ..... 5 mA or less
Dimensions (W × H × D):
- DIN
  - Chassis ..... 178 × 50 × 157 mm (7 × 2 × 6-1/8 in.)
  - Nose ..... 188 × 58 × 20 mm (7-3/8 × 2-1/4 × 3/4 in.)
- D
  - Chassis ..... 178 × 50 × 162 mm (7 × 2 × 6-3/8 in.)
  - Nose ..... 170 × 46 × 15 mm (6-3/4 × 1-3/4 × 5/8 in.)

Weight ..... 1.4 kg (3.1 lbs)

Audio

Continuous power output is 22 W per channel minimum into 4 ohms, both channels driven 50 to 15,000 Hz with no more than 5% THD.
Maximum power output ..... 50 W × 4
50 W × 2/4 Ω + 70 W × 1/2 Ω (for subwoofer)
Load impedance ..... 4 Ω (4 – 8 Ω [2 Ω for 1 ch] allowable)
Preout max output level/output impedance ..... 2.2 V/1 kΩ
Equalizer (3-Band Parametric Equalizer):
- Low
  - Frequency ..... 40/80/100/160 Hz
  - Q Factor ..... 0.35/0.59/0.95/1.15 (+6 dB when boosted)
  - Gain ..... ±12dB
- Mid
  - Frequency ..... 200/500/1k/2k Hz
  - Q Factor ..... 0.35/0.59/0.95/1.15 (+6 dB when boosted)
  - Gain ..... ±12dB
- High
  - Frequency ..... 3.15k/8k/10k/12.5k Hz
  - Q Factor ..... 0.35/0.59/0.95/1.15 (+6 dB when boosted)
  - Gain ..... ±12dB

Loudness contour
- Low ..... +3.5 dB (100 Hz), +3 dB (10 kHz)
- Mid ..... +10 dB (100 Hz), +6.5 dB (10 kHz)
- High ..... +11 dB (100 Hz), +11 dB (10 kHz) (volume: –30 dB)

Tone controls:
- Bass
  - Frequency ..... 40/63/100/160 Hz
  - Gain ..... ±12dB
- Treble
  - Frequency ..... 2.5k/4k/6.3k/10k Hz
  - Gain ..... ±12dB

HPF:
- Frequency ..... 50/80/125 Hz
- Slope ..... –12 dB/oct

Subwoofer:
- Frequency ..... 50/80/125 Hz
- Slope ..... –18 dB/oct
- Gain ..... ±12dB
- Phase ..... Normal/Reverse

CD player

System ..... Compact disc audio system
Usable discs ..... Compact disc
Signal format:
- Sampling frequency ..... 44.1 kHz
- Number of quantization bits ..... 16; linear

Frequency characteristics ..... 5 – 20,000 Hz (±1 dB)
Signal-to-noise ratio ..... 94 dB (1 kHz) (IHF-A network)
Dynamic range ..... 92 dB (1 kHz)
Number of channels ..... 2 (stereo)

FM tuner

Frequency range ..... 87.9 – 107.9 MHz
Usable sensitivity ..... 8 dBf (0.7 μV/75 Ω, mono, S/N: 30 dB)
50 dB quieting sensitivity ..... 10 dBf (0.9 μV/75 Ω, mono)
Signal-to-noise ratio ..... 75 dB (IHF-A network)
Distortion ..... 0.3 % (at 65 dBf, 1 kHz, stereo)
0.1 % (at 65 dBf, 1 kHz, mono)
Frequency response ..... 30 – 15,000 Hz (±3 dB)
Stereo separation ..... 45 dB (at 65 dBf, 1 kHz)
Selectivity ..... 80 dB (±200 kHz)
Three-signal intermodulation (desired signal level) ..... 30 dBf (two undesired signal level: 100 dBf)

● DEH-P3500/XM/UC, DEH-P3500/XN/UC

General

Power source ..... 14.4 V DC (10.8 – 15.1 V allowable)
Grounding system ..... Negative type
Max. current consumption
..... 10.0 A
Backup current
..... 5 mA or less
Dimensions (W × H × D):
DIN
Chassis ..... 178 × 50 × 157 mm (7 × 2 × 6-1/8 in.)
Nose ..... 188 × 58 × 20 mm (7-3/8 × 2-1/4 × 3/4 in.)
D
Chassis ..... 178 × 50 × 162 mm (7 × 2 × 6-3/8 in.)
Nose ..... 170 × 46 × 15 mm (6-3/4 × 1-3/4 × 5/8 in.)
Weight ..... 1.4 kg (3.1 lbs)

Audio

Continuous power output is 22 W per channel minimum into 4 ohms, both channels driven 50 to 15,000 Hz with no more than 5% THD.
Maximum power output ..... 50 W × 4
50 W × 2/4 Ω + 70 W × 1/2 Ω (for subwoofer)
Load impedance ..... 4 Ω (4 – 8 Ω [2 Ω for 1 ch] allowable)
Preout max output level/output impedance
..... 2.2 V/1 kΩ
Equalizer (3-Band Parametric Equalizer):
Low
Frequency ..... 40/80/100/160 Hz
Q Factor ..... 0.35/0.59/0.95/1.15 (+6 dB when boosted)
Gain ..... ±12dB
Mid
Frequency ..... 200/500/1k/2k Hz
Q Factor ..... 0.35/0.59/0.95/1.15 (+6 dB when boosted)
Gain ..... ±12dB
High
Frequency ..... 3.15k/8k/10k/12.5k Hz
Q Factor ..... 0.35/0.59/0.95/1.15 (+6 dB when boosted)
Gain ..... ±12dB
Loudness contour
Low ..... +3.5 dB (100 Hz), +3 dB (10 kHz)
Mid ..... +10 dB (100 Hz), +6.5 dB (10 kHz)
High ..... +11 dB (100 Hz), +11 dB (10 kHz) (volume: –30 dB)
Tone controls:
Bass
Frequency ..... 40/63/100/160 Hz
Gain ..... ±12dB
Treble
Frequency ..... 2.5k/4k/6.3k/10k Hz
Gain ..... ±12dB
HPF:
Frequency ..... 50/80/125 Hz
Slope ..... –12 dB/oct
Subwoofer:
Frequency ..... 50/80/125 Hz
Slope ..... –18 dB/oct
Gain ..... ±12dB
Phase ..... Normal/Reverse

CD player

System ..... Compact disc audio system
Usable discs ..... Compact disc
Signal format:
Sampling frequency ..... 44.1 kHz
Number of quantization bits
..... 16; linear
Frequency characteristics ... 5 – 20,000 Hz (±1 dB)
Signal-to-noise ratio ..... 94 dB (1 kHz) (IHF-A network)
Dynamic range ..... 92 dB (1 kHz)
Number of channels ..... 2 (stereo)

FM tuner

Frequency range ..... 87.9 – 107.9 MHz
Usable sensitivity ..... 8 dBf (0.7 μV/75 Ω, mono, S/N: 30 dB)
50 dB quieting sensitivity ..... 10 dBf (0.9 μV/75 Ω, mono)
Signal-to-noise ratio ..... 75 dB (IHF-A network)
Distortion ..... 0.3 % (at 65 dBf, 1 kHz, stereo)
0.1 % (at 65 dBf, 1 kHz, mono)
Frequency response ..... 30 – 15,000 Hz (±3 dB)
Stereo separation ..... 45 dB (at 65 dBf, 1 kHz)
Selectivity ..... 80 dB (±200 kHz)
Three-signal intermodulation (desired signal level)
..... 30 dBf (two undesired signal level: 100 dBf)

● DEH-P4550/XM/ES, DEH-P4550/XN/ES

General

Rated power source ..... 14.4 V DC
(allowable voltage range: 12.0 – 14.4 V DC)
Grounding system ..... Negative type
Max. current consumption
..... 10.0 A
Backup current
..... 5 mA or less
Dimensions (W × H × D):
DIN
Chassis ..... 178 × 50 × 157 mm
Nose ..... 188 × 58 × 20 mm
D
Chassis ..... 178 × 50 × 162 mm
Nose ..... 170 × 46 × 15 mm
Weight ..... 1.4 kg

Audio

Continuous power output is 22 W per channel minimum into 4 ohms, both channels driven 50 to 15,000 Hz with no more than 5% THD.
Maximum power output ..... 50 W × 4
50 W × 2/4 Ω + 70 W × 1/2 Ω (for subwoofer)
Load impedance ..... 4 Ω (4 – 8 Ω [2 Ω for 1 ch] allowable)
Preout max output level/output impedance
..... 2.2 V/1 kΩ
Equalizer (3-Band Parametric Equalizer):
Low
Frequency ..... 40/80/100/160 Hz
Q Factor ..... 0.35/0.59/0.95/1.15 (+6 dB when boosted)
Gain ..... ±12dB
Mid
Frequency ..... 200/500/1k/2k Hz
Q Factor ..... 0.35/0.59/0.95/1.15 (+6 dB when boosted)
Gain ..... ±12dB
High
Frequency ..... 3.15k/8k/10k/12.5k Hz
Q Factor ..... 0.35/0.59/0.95/1.15 (+6 dB when boosted)
Gain ..... ±12dB
Loudness contour
Low ..... +3.5 dB (100 Hz), +3 dB (10 kHz)
Mid ..... +10 dB (100 Hz), +6.5 dB (10 kHz)
High ..... +11 dB (100 Hz), +11 dB (10 kHz)
(volume: –30 dB)
Tone controls:
Bass
Frequency ..... 40/63/100/160 Hz
Gain ..... ±12dB
Treble
Frequency ..... 2.5k/4k/6.3k/10k Hz
Gain ..... ±12dB
HPF:
Frequency ..... 50/80/125 Hz
Slope ..... –12 dB/oct
Subwoofer:
Frequency ..... 50/80/125 Hz
Slope ..... –18 dB/oct
Gain ..... ±12dB
Phase ..... Normal/Reverse

CD player

System ..... Compact disc audio system
Usable discs ..... Compact disc
Signal format:
Sampling frequency ..... 44.1 kHz
Number of quantization bits
..... 16; linear
Frequency characteristics ... 5 – 20,000 Hz (±1 dB)
Signal-to-noise ratio ..... 94 dB (1 kHz) (IEC-A network)
Dynamic range ..... 92 dB (1 kHz)
Number of channels ..... 2 (stereo)

FM tuner

Frequency range ..... 87.5 – 108.0 MHz
Usable sensitivity ..... 8 dBf (0.7 μV/75 Ω, mono, S/N: 30 dB)
50 dB quieting sensitivity ..... 10 dBf (0.9 μV/75 Ω, mono)
Signal-to-noise ratio ..... 75 dB (IEC-A network)
Distortion ..... 0.3 % (at 65 dBf, 1 kHz, stereo)
0.1 % (at 65 dBf, 1 kHz, mono)
Frequency response ..... 30 – 15,000 Hz (±3 dB)
Stereo separation ..... 45 dB (at 65 dBf, 1 kHz)

AM tuner

Frequency range ..... 531 – 1,602 kHz (9 kHz)
530 – 1,640 kHz (10 kHz)
Usable sensitivity ..... 18 μV (S/N: 20 dB)
Signal-to-noise ratio ..... 65 dB (IEC-A network)

A

B

C

D

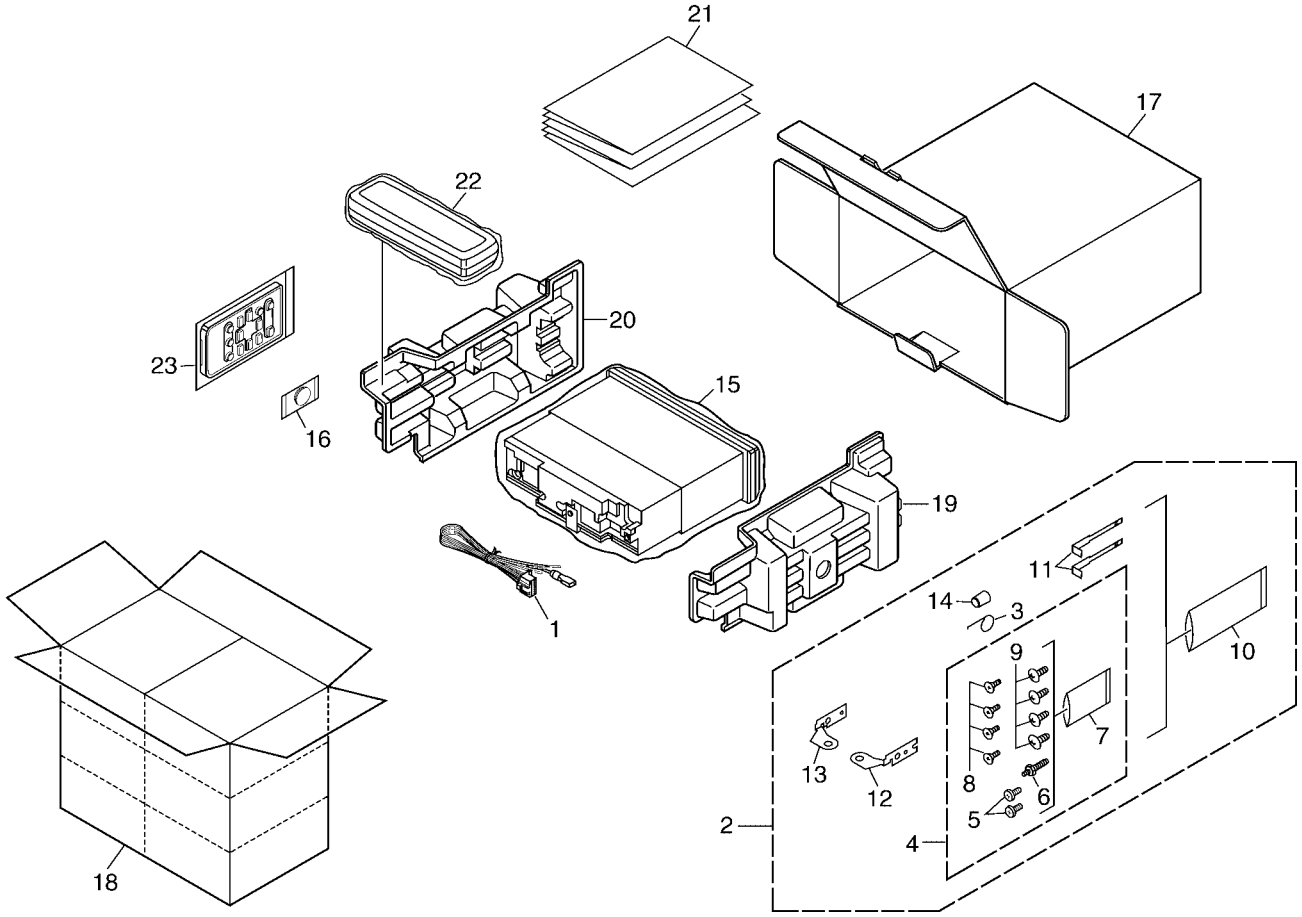
E

F

2. EXPLODED VIEWS AND PARTS LIST

2.1 PACKING

(DEH-P350/XM/UC, DEH-P350/XN/UC, DEH-P3500/XM/UC, DEH-P3500/XN/UC)



NOTE:

- Parts marked by "*" are generally unavailable because they are not in our Master Spare Parts List.
- Screws adjacent to ∇ mark on the product are used for disassembly.
- For the applying amount of lubricants or glue, follow the instructions in this manual.
  (In the case of no amount instructions, apply as you think it appropriate.)

(1) PACKING(DEH-P350/XM/UC, DEH-P350/XN/UC, DEH-P3500/XM/UC, DEH-P3500/XN/UC) SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	Cord Assy	CDE7154
	2	Accessory Assy	CEA3376
	3	Spring	CBH1650
	4	Screw Assy	CEA3445
	5	Fixing Screw	BPZ20P060FZK
	6	Screw	CBA1002
*	7	Polyethylene Bag	CEG-127
	8	Screw	CRZ50P090FTC
	9	Screw	TRZ50P080FTC
*	10	Polyethylene Bag	CEG-158
	11	Handle	CNC5395
	12	Holder	CND1249
	13	Holder	CND1250
	14	Bush	CNV3930
	15	Polyethylene Bag	CEG1173
*	16	Battery	CEX1065
	17	Carton	See Contrast table(2)
	18	Contain Box	See Contrast table(2)
	19	Protector	CHP2663
	20	Protector	CHP2664
	21-1	Owner's Manual	See Contrast table(2)
	21-2	Installation Manual	See Contrast table(2)
*	21-3	Warranty Card	See Contrast table(2)
*	21-4	Card	See Contrast table(2)
*	21-5	Caution Card	See Contrast table(2)
	22	Case Assy	CXB3520
	23	Remote Control Unit	CXC1265

(2) CONTRAST TABLE

DEH-P350/XM/UC, DEH-P350/XN/UC, DEH-P3500/XM/UC and DEH-P3500/XN/UC are constructed the same except for the following:

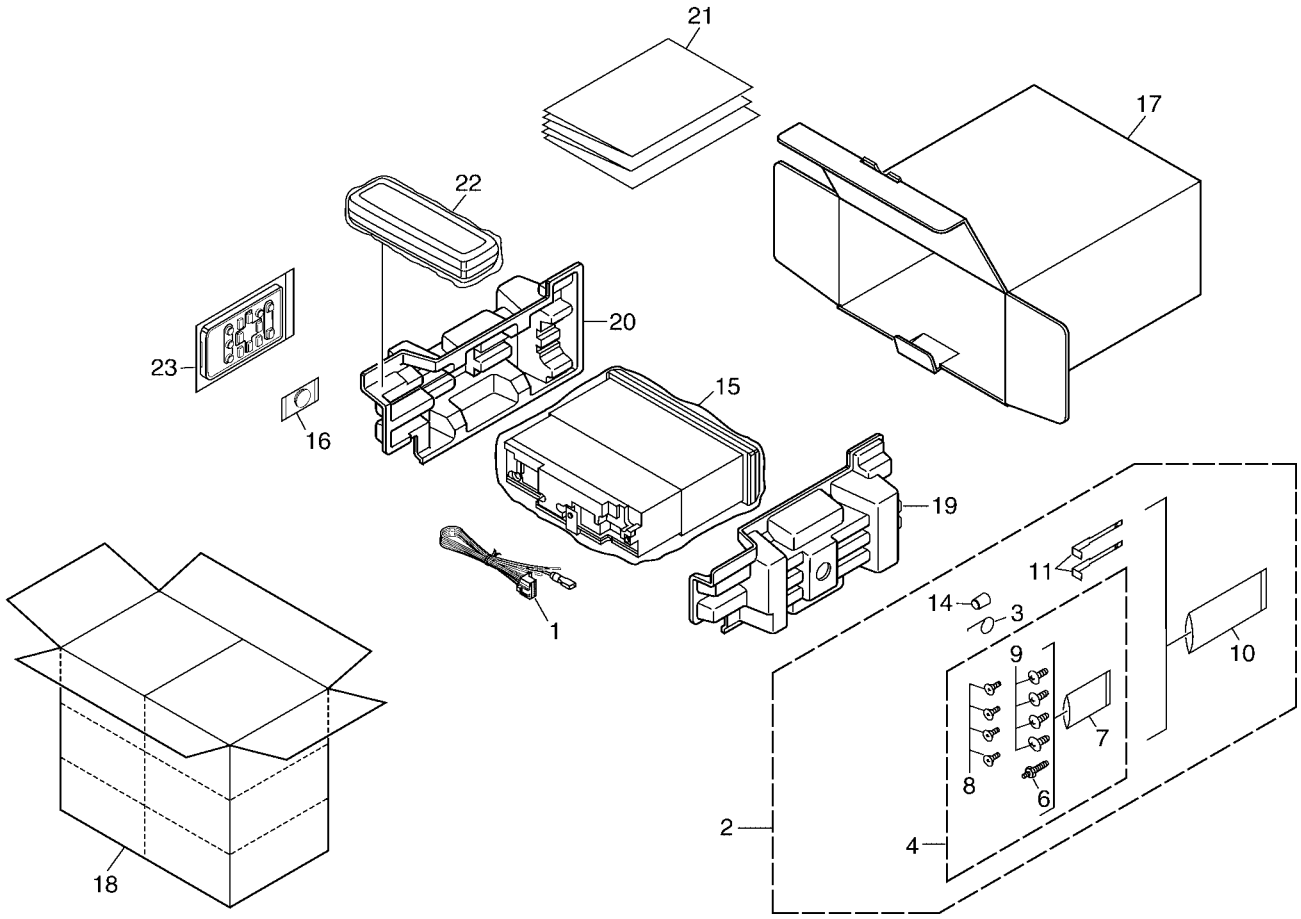
Mark No.	Symbol and Description	Part No. DEH-P350/XM/UC	Part No. DEH-P3500/XM/UC
17	Carton	CHG4787	CHG4788
18	Contain Box	CHL4787	CHL4788
21-1	Owner's Manual	CRD3697	CRD3699
21-2	Installation Manual	CRD3698	CRD3700
* 21-3	Warranty Card	CRY1070	Not used
* 21-4	Card	Not used	ARY1048
* 21-5	Caution Card	Not used	CRP1294

Mark No.	Symbol and Description	Part No. DEH-P350/XN/UC	Part No. DEH-P3500/XN/UC
17	Carton	CHG4931	CHG4930
18	Contain Box	CHL4931	CHL4930
21-1	Owner's Manual	CRD3697	CRD3699
21-2	Installation Manual	CRD3698	CRD3700
* 21-3	Warranty Card	CRY1070	Not used
* 21-4	Card	Not used	ARY1048
* 21-5	Caution Card	Not used	CRP1294

● Owner's Manual, Installation Manual

Model	Part No.	Language
DEH-P350/XM/UC	CRD3697	English, French, Spanish
DEH-P350/XN/UC	CRD3698	
DEH-P3500/XM/UC	CRD3699	English, French, Spanish
DEH-P3500/XN/UC	CRD3700	

2.2 PACKING(DEH-P4550/XM/ES, DEH-P4550/XN/ES)



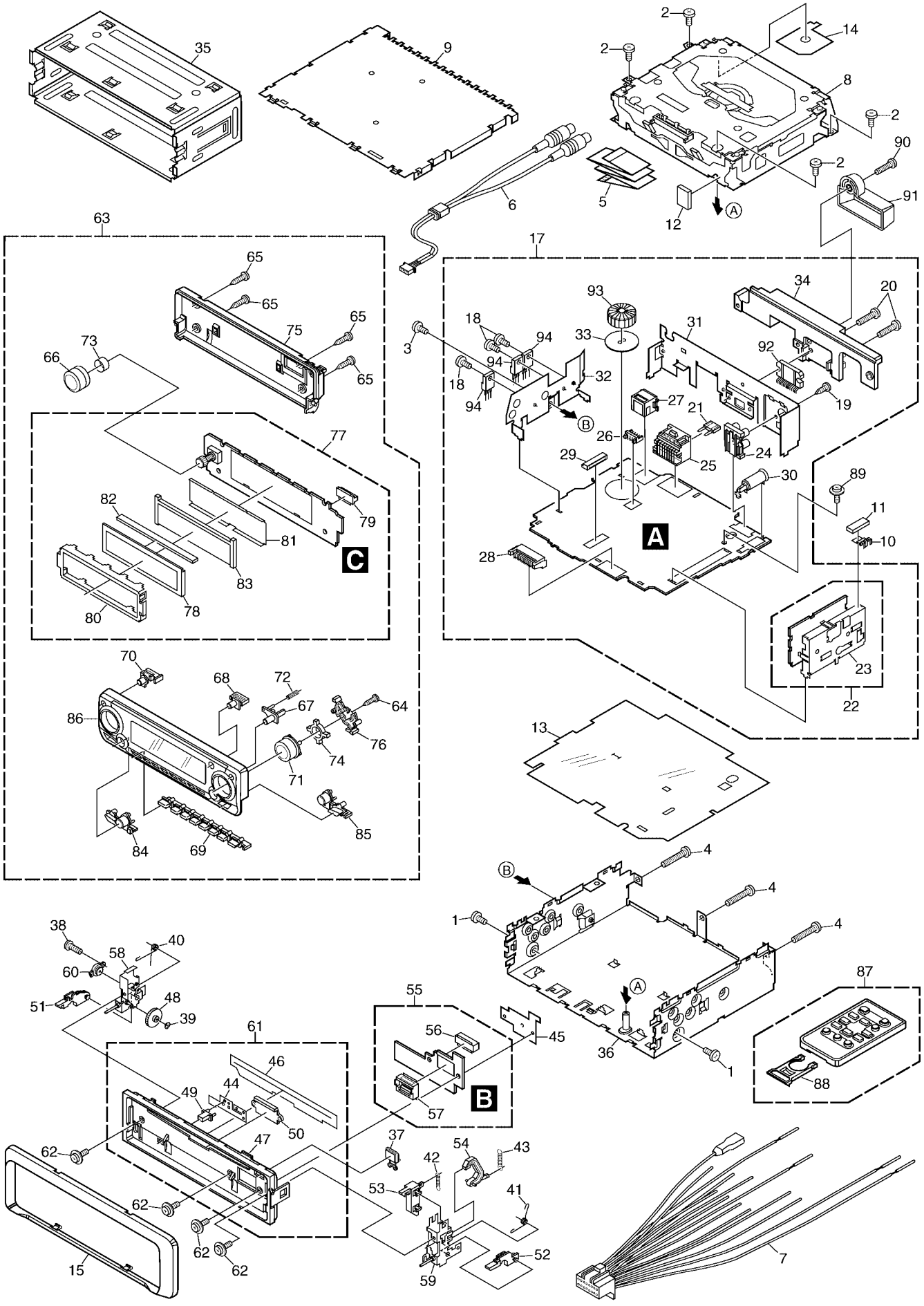
● PACKING(DEH-P4550/XM/ES, DEH-P4550/XN/ES) SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	Cord Assy	CDE7154
	2	Accessory Assy	CEA3439
	3	Spring	CBH1650
	4	Screw Assy	CEA3437
	5	•••••	
	6	Screw	CBA1002
*	7	Polyethylene Bag	CEG-127
	8	Screw	CRZ50P090FTC
	9	Screw	TRZ50P080FTC
*	10	Polyethylene Bag	CEG-158
	11	Handle	CNC5395
	12	•••••	
	13	•••••	
	14	Bush	CNV3930
	15	Polyethylene Bag	CEG-162
*	16	Battery	CEX1065
	17	Carton(DEH-P4550/XM/ES)	CHG4790
		Carton(DEH-P4550/XN/ES)	CHG4932
	18	Contain Box(DEH-P4550/XM/ES)	CHL4790
		Contain Box(DEH-P4550/XN/ES)	CHL4932
	19	Protector	CHP2663
	20	Protector	CHP2664
	21-1	Owner's Manual	CRD3701
	21-2	Owner's Manual	CRD3702
	21-3	Installation Manual	CRD3703
	22	Case Assy	CXB3520
	23	Remote Control Unit	CXC1265

● **Owner's Manual, Installation Manual**

Model	Part No.	Language
DEH-P4550/XM/ES DEH-P4550/XN/ES	CRD3701	English, Spanish, Portuguese(B)
	CRD3702	Traditional Chinese, Arabic
	CRD3703	English, Spanish, Portuguese(B) Traditional Chinese, Arabic

2.3 EXTERIOR



(1) EXTERIOR SECTION PARTS LIST

Mark No.	Description	Part No.
1	Screw	BMZ30P040FZK
2	Screw	BSZ26P060FTC
3	Screw	BSZ30P060FTC
4	Screw	BSZ30P200FTC
5	Cable	CDE7128
6	Cord Assy	See Contrast table(2)
7	Cord Assy	CDE7154
8	CD Mechanism Module(S10)	CXK5600
9	Case	CNB2793
10	Holder	CNC8915
11	Cushion	CNM4870
12	Insulator	CNM7682
13	Insulator	CNM7935
14	Insulator	CNM8174
15	Panel	See Contrast table(2)
16	•••••	
17	Tuner Amp Unit	See Contrast table(2)
18	Screw	ASZ26P060FTC
19	Screw	BPZ26P080FTC
20	Screw	BSZ26P160FTC
21	Fuse(10A)	CEK1208
22	FM/AM Tuner Unit	CWE1646
23	Holder	CND1054
24	Pin Jack(CN352)	CKB1051
25	Plug(CN901)	CKM1376
26	Plug(CN351)	See Contrast table(2)
27	Connector(CN101)	CKS3408
28	Plug(CN801)	CKS3537
29	Connector(CN651)	CKS3835
30	Antenna Jack(CN401)	CKX1056
31	Holder	See Contrast table(2)
32	Holder	CND1352
33	Insulator	CNM8245
34	Heat Sink	CNR1668
35	Holder Unit	See Contrast table(2)
36	Chassis Unit	CXB9528
37	Button(EJECT)	CAC7752
38	Screw(M2x2)	CBA1176
39	Washer	CBF1038
40	Spring	CBH2650
41	Spring	CBH2651
42	Spring	CBH2652
43	Spring	CBH2653
44	Spring	CBL1512
45	Holder	CND1254
46	Cover	CNM6854
47	Panel	CNS7245
48	Gear	CNV5997
49	Pin	CNV6486
50	Lighting Conductor	CNV6487
51	Arm	CNV7400
52	Arm	CNV7401
53	Arm	CNV7402
54	Arm	CNV7403
55	Panel Unit	CWM8758
56	Socket(CN1950)	CKS3550
57	Connector(CN1951)	CKS4462
58	Holder Unit	CXB9501
59	Holder Unit	CXB9502
60	Damper Unit	CXB9503
61	Service Panel Unit	CXX1691
62	Screw	IMS20P045FZK
63	Detach Grille Assy	See Contrast table(2)
64	Screw	BPZ20P060FTC
65	Screw	BPZ20P100FZK
66	Knob	See Contrast table(2)
67	Button(OPEN)	CAC7728
68	Button(AUDIO)	CAC7729
69	Button(DISP, 1-6, FUNC)	CAC7730
70	Button(CLK)	CAC7751
71	Button(SELECT)	See Contrast table(2)
72	Spring	CBH2654
73	Spring	CBL1470
74	Cushion	CNM8291
75	Cover	CNS7247
76	Holder	CNV7405
77	Keyboard Unit	CWM8607
78	LCD	CAW1755
79	Connector(CN1901)	CKS4524
80	Holder	CND1215
81	Sheet	CNM7921
82	Connector	CNV7365
83	Lighting Conductor	CNV7406
84	Button Unit(SRC, EQ)	CXB9924
85	Button Unit(BAND, EQ-EX)	CXB9925
86	Sub Grille Assy	See Contrast table(2)
87	Remote Control Unit	CXC1265
88	Cover	CNS7068
89	Screw	ISS26P055FTC
90	Screw	See Contrast table(2)
91	Holder	See Contrast table(2)
92	IC(IC301)	PAL007A
93	Choke Coil(L301)	CTH1280
94	Transistor(Q651, 911, 921)	2SD2396

(2) CONTRAST TABLE

DEH-P350/XM/UC, DEH-P350/XN/UC, DEH-P3500/XM/UC, DEH-P3500/XN/UC, DEH-P4550/XM/ES and DEH-P4550/XN/ES are constructed the same except for the following:

Mark No.	Symbol and Description	Part No.		
		DEH-P350/XM/UC	DEH-P3500/XM/UC	DEH-P4550/XM/ES
6	Cord Assy	CDE7129	Not used	Not used
15	Panel	CNS6935	CNS6934	CNS6935
17	Tuner Amp Unit	CWM8593	CWM8594	CWM8596
26	Plug(CN351)	CKS1238	Not used	Not used
31	Holder	CND1239	CND1477	CND1477
35	Holder Unit	CXB6681	CXB6681	CXB6681
63	Detach Grille Assy	CXB9677	CXB9678	CXB9680
66	Knob	CAA2755	CAA2753	CAA2755
71	Button(SELECT)	CAC7733	CAC7731	CAC7733
86	Sub Grille Assy	CXB9977	CXB9978	CXB9980
90	Screw	Not used	BMZ40P140FTC	Not used
91	Holder	Not used	CNV7619	Not used

Mark No.	Symbol and Description	Part No.		
		DEH-P350/XN/UC	DEH-P3500/XN/UC	DEH-P4550/XN/ES
6	Cord Assy	CDE7129	Not used	Not used
15	Panel	CNS6935	CNS6934	CNS6935
17	Tuner Amp Unit	CWM8593	CWM8594	CWM8596
26	Plug(CN351)	CKS1238	Not used	Not used
31	Holder	CND1239	CND1477	CND1477
35	Holder	CNC8659	CNC8659	CNC8659
63	Detach Grille Assy	CXB9677	CXB9678	CXB9680
66	Knob	CAA2755	CAA2753	CAA2755
71	Button(SELECT)	CAC7733	CAC7731	CAC7733
86	Sub Grille Assy	CXB9977	CXB9978	CXB9980
90	Screw	Not used	BMZ40P140FTC	Not used
91	Holder	Not used	CNV7619	Not used

A

B

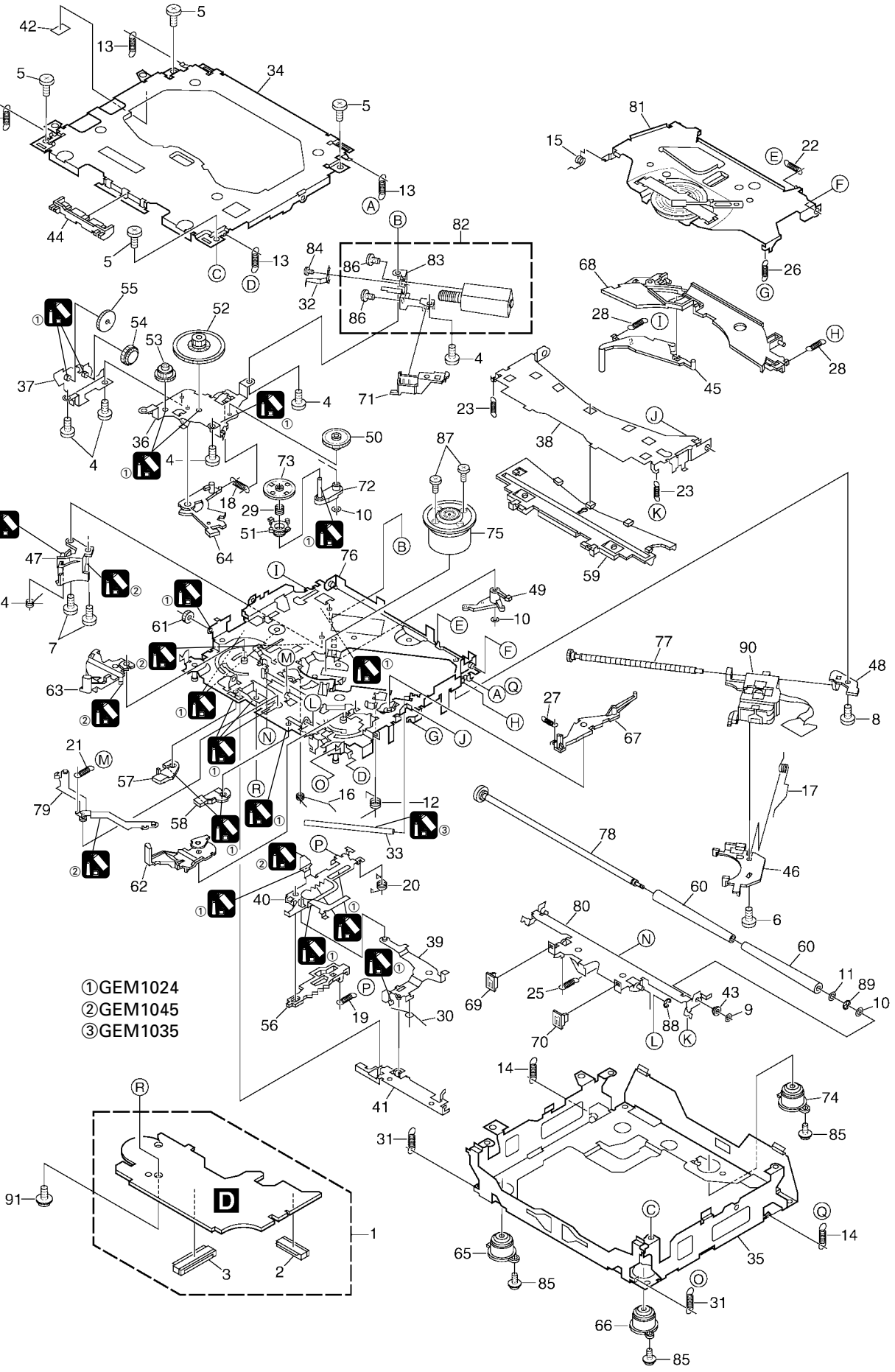
C

D

E

F

2.4 CD MECHANISM MODULE



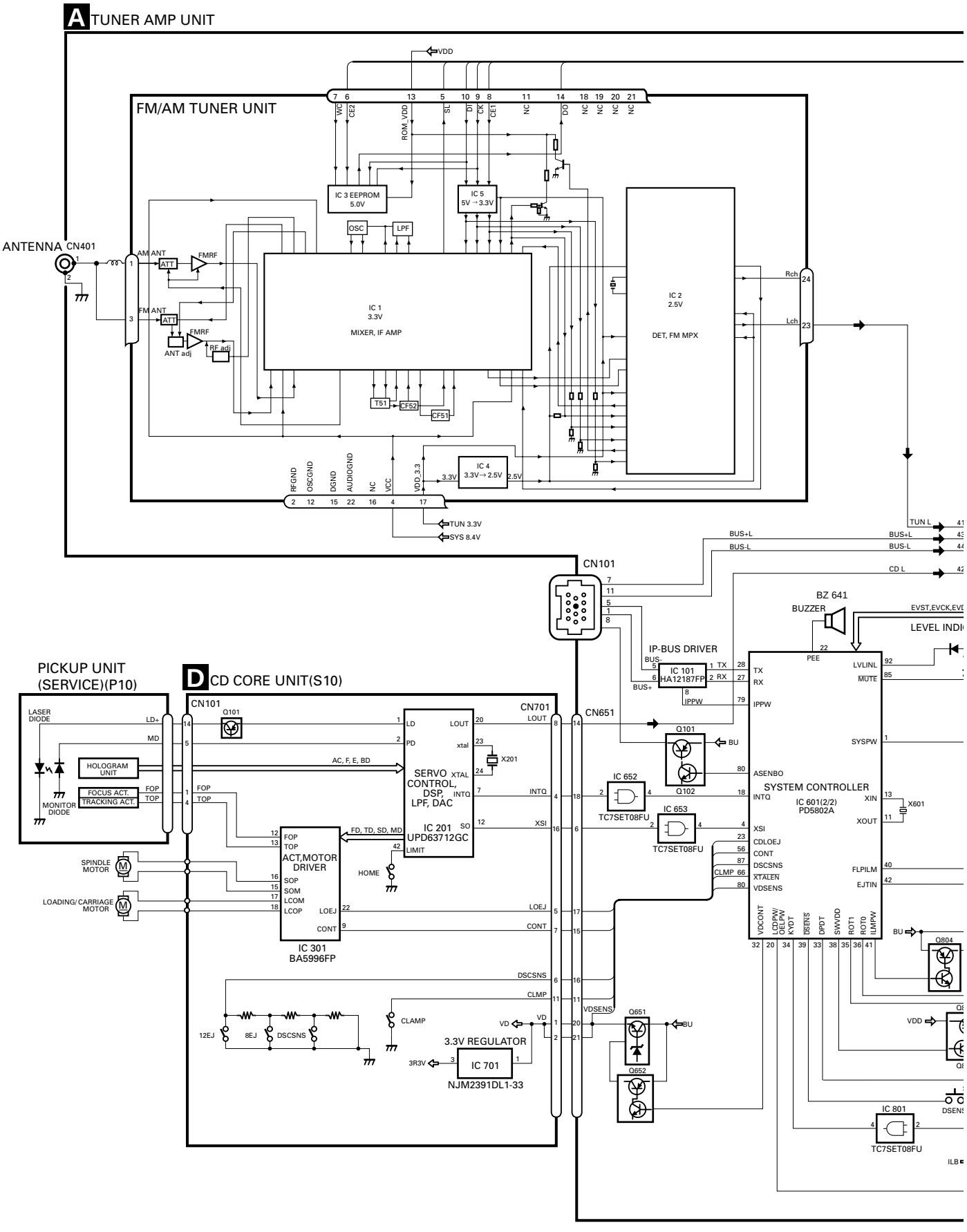
● CD MECHANISM MODULE SECTION PARTS LIST

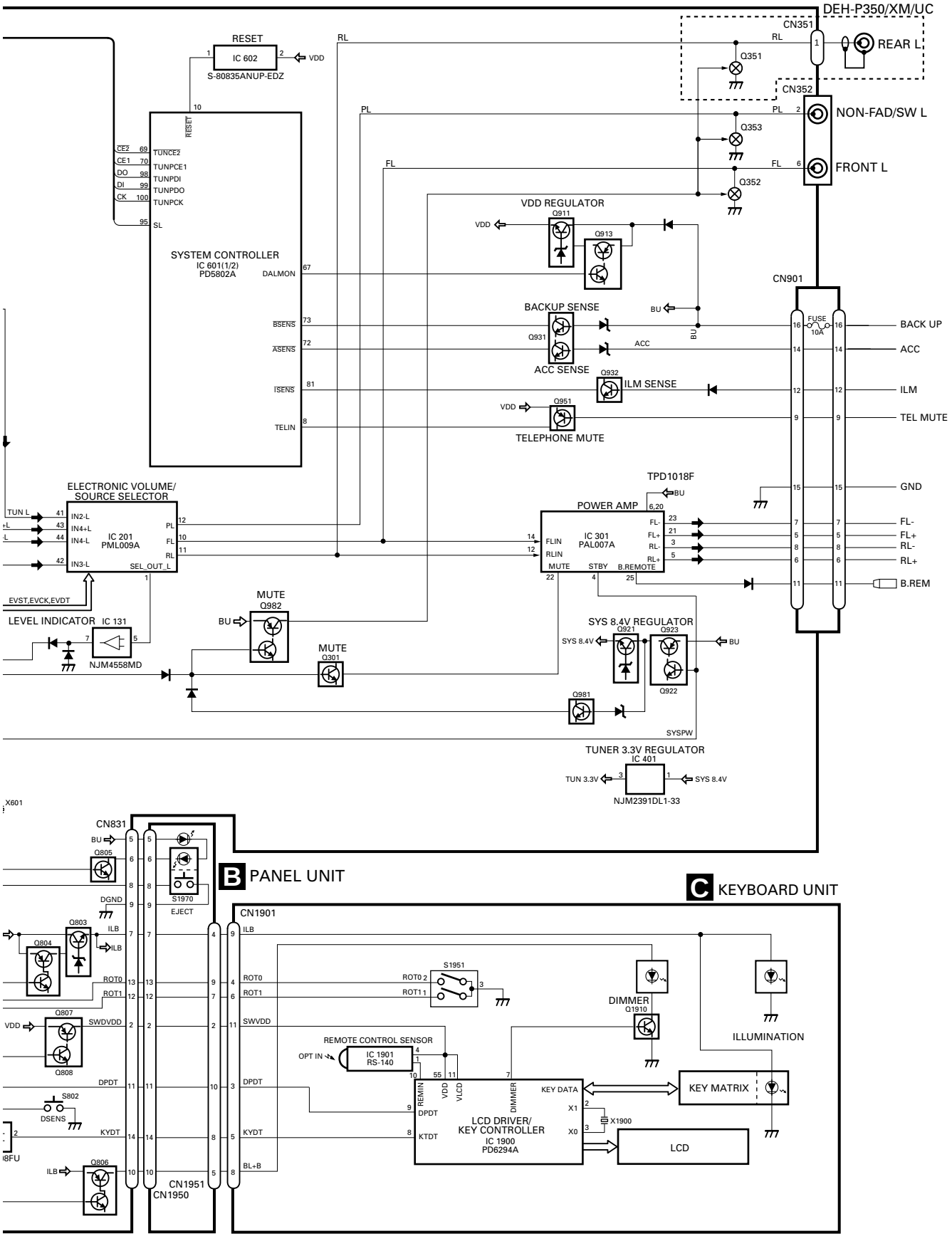
Mark	No.	Description	Part No.
	1	CD Core Unit(S10)	CWX2708
	2	Connector(CN101)	CKS4182
	3	Connector(CN701)	CKS4188
	4	Screw	BMZ20P035FTC
	5	Screw	BSZ20P040FTC
	6	Screw(M2x4)	CBA1362
	7	Screw(M2x3)	CBA1511
	8	Screw(M2x3)	CBA1527
	9	Washer	CBF1037
	10	Washer	CBF1038
	11	Washer	CBF1060
	12	Spring	CBH2390
	13	Spring	CBH2606
	14	Spring	CBH2607
	15	Spring	CBH2608
	16	Spring	CBH2609
	17	Spring	CBH2610
	18	Spring	CBH2611
	19	Spring	CBH2612
	20	Spring	CBH2613
	21	Spring	CBH2614
	22	Spring	CBH2615
	23	Spring	CBH2616
	24	Spring	CBH2617
	25	Spring	CBH2620
	26	Spring	CBH2621
	27	Spring	CBH2641
	28	Spring	CBH2642
	29	Spring	CBH2643
	30	Spring	CBH2659
	31	Spring	CBH2688
*	32	Spring	CBL1614
	33	Shaft	CLA3845
	34	Frame	CNC9962
	35	Frame	CNC9963
	36	Bracket	CNC9966
	37	Bracket	CNC9967
	38	Arm	CNC9968
	39	Arm	CNC9973
	40	Lever	CNC9983
	41	Lever	CNC9984
	42	Sheet	CNM8134
	43	Collar	CNV6906
	44	Guide	CNV6925
	45	Arm	CNV7198

Mark	No.	Description	Part No.
	46	Rack	CNV7199
	47	Holder	CNV7201
	48	Holder	CNV7202
	49	Arm	CNV7203
	50	Gear	CNV7207
	51	Gear	CNV7208
	52	Gear	CNV7209
	53	Gear	CNV7210
	54	Gear	CNV7211
	55	Gear	CNV7212
	56	Rack	CNV7214
	57	Arm	CNV7215
	58	Arm	CNV7216
	59	Guide	CNV7217
	60	Roller	CNV7218
	61	Gear	CNV7219
	62	Arm	CNV7221
	63	Arm	CNV7220
	64	Arm	CNV7222
	65	Damper	CNV7313
	66	Damper	CNV7314
	67	Arm	CNV7341
	68	Arm	CNV7342
	69	Guide	CNV7360
	70	Guide	CNV7361
	71	Holder	CNV7437
	72	Arm	CNV7444
	73	Gear	CNV7595
	74	Damper	CNV7618
	75	Motor Unit(M1)	CXB6007
	76	Chassis Unit	CXB8728
	77	Screw Unit	CXB8729
	78	Gear Unit	CXB8731
	79	Arm Unit	CXB8732
	80	Arm Unit	CXB8735
	81	Arm Unit	CXB8852
	82	Motor Unit(M2)	CXB8933
	83	Bracket	CNC9985
	84	Screw	JFZ20P020FTC
	85	Screw(M2x5)	EBA1028
	86	Screw	JFZ20P020FTC
	87	Screw	JGZ17P022FTC
	88	Washer	YE15FTC
	89	Washer	YE20FTC
	90	Pickup Unit(Service)(P10)	CXX1641
	91	Screw	IMS26P030FMC

3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

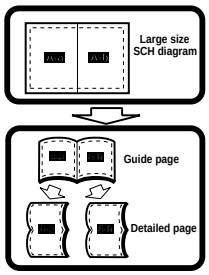
3.1 BLOCK DIAGRAM

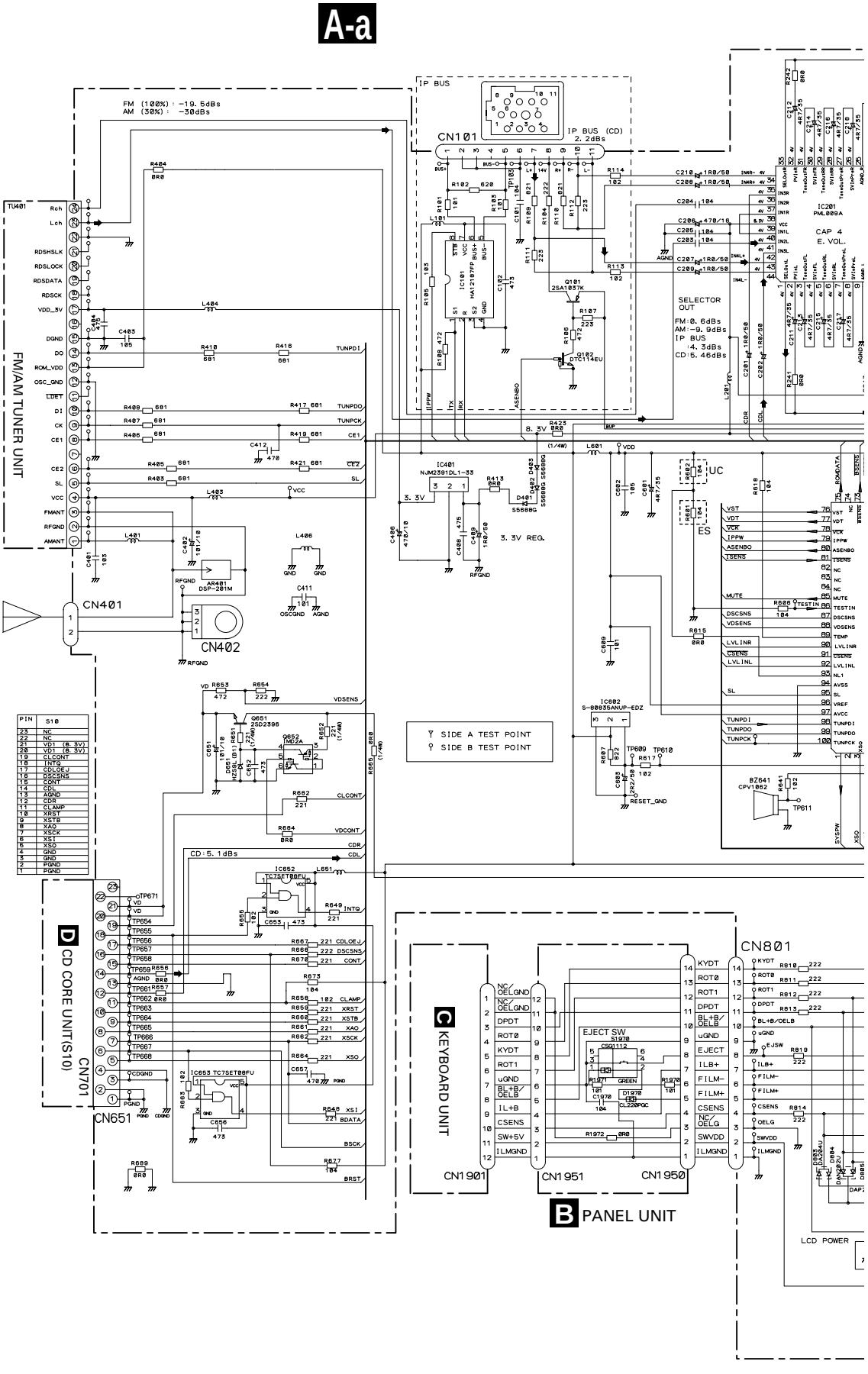



DEH-P350/XM/UC
CN351
REAR L
CN352
NON-FAD/SW L
FRONT L
Q351
Q353
Q352
RESET
IC 602
S-80835ANUP-EDZ
VDD
RL
PL
FL
SYSTEM CONTROLLER
IC 601(1/2)
PD5802A
DALMON
BSENS
ASENS
ISENS
TELIN
TUNCE2
TUNPCE1
TUNPDI
TUNPDO
TUNPCK
SL
VDD REGULATOR
Q911
Q913
BACKUP SENSE
Q931
ACC SENSE
Q932
ILM SENSE
Q951
TELEPHONE MUTE
BU
ACC
CN901
FUSE 10A
BACK UP
ACC
ILM
TEL MUTE
GND
FL-
FL+
RL-
RL+
B.REM
ELECTRONIC VOLUME/
SOURCE SELECTOR
IC 201
PML009A
TUN L
IN2-L
IN4+L
IN4-L
IN3-L
SEL_OUT_L
EVST,EVCK,EVDT
TPD1018F
POWER AMP
IC 301
PAL007A
FLIN
RLIN
MUTE
STBY
B.REMOTE
LEVEL INDICATOR IC 131
NJM4558MD
MUTE
Q982
Q301
SYS 8.4V REGULATOR
Q921
Q923
Q922
Q981
SYS 8.4V
SYSPW
TUNER 3.3V REGULATOR
IC 401
TUN 3.3V
NJM2391DL1-33
X601
CN831
Q805
S1970
EJECT
DGND
Q803
Q804
ILB
ROT0
ROT1
Q807
SWDVDD
Q808
DPDT
S802
DSENS
KYDT
Q806
CN1951
CN1950
B PANEL UNIT
C KEYBOARD UNIT
CN1901
S1951
DIMMER
Q1910
ILLUMINATION
REMOTE CONTROL SENSOR
OPT IN
IC 1901
RS-140
REMIN
VLCD
KEY DATA
KEY MATRIX
LCD DRIVER/
KEY CONTROLLER
IC 1900
PD6294A
X1
X0
X1900
LCD
BL+B

3.2 OVERALL CONNECTION DIAGRAM(GUIDE PAGE)

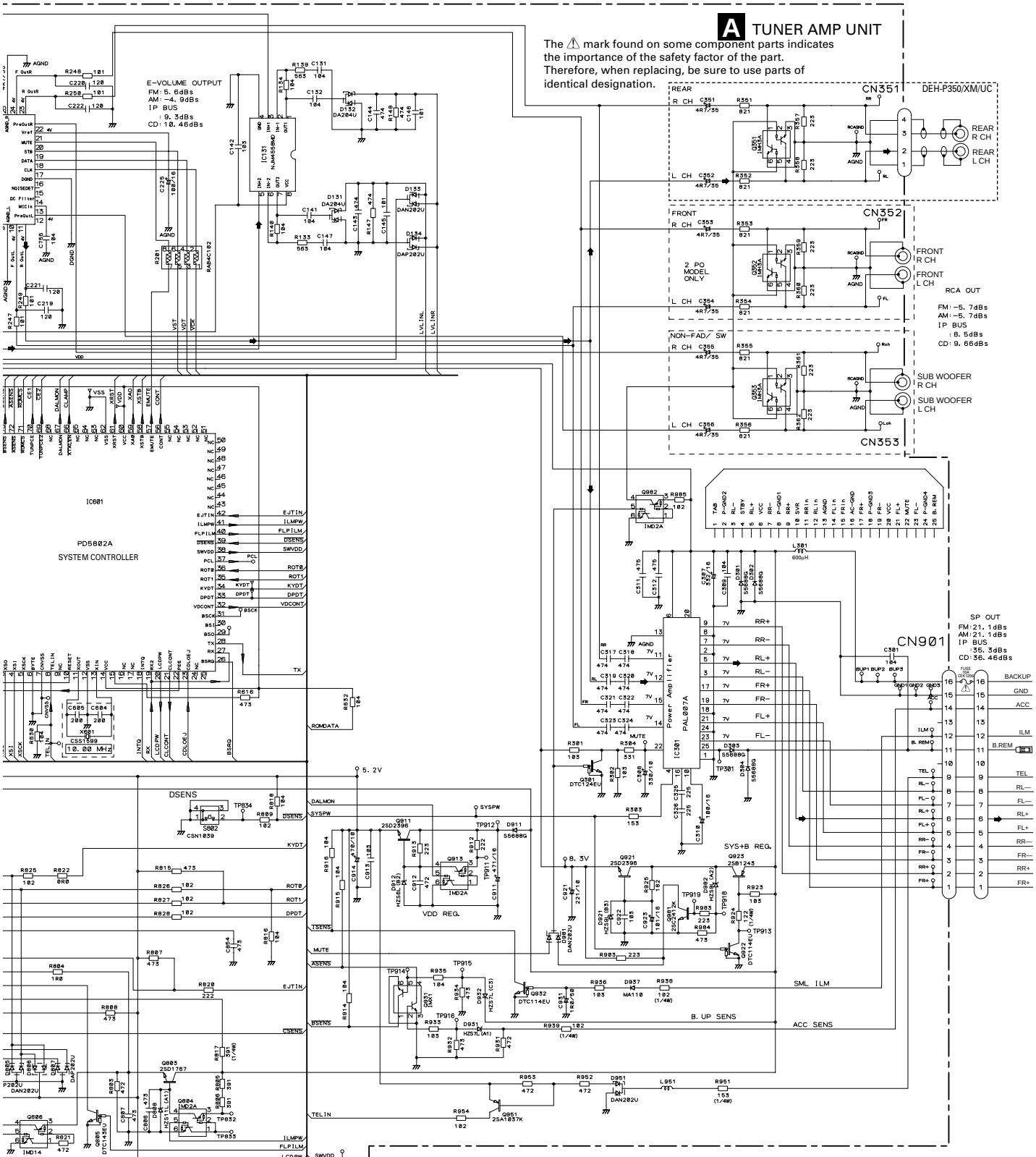
Note: When ordering service parts, be sure to refer to "EXPLODED VIEWS AND PARTS LIST" or "ELECTRICAL PARTS LIST".





A TUNER AMP UNIT

The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.



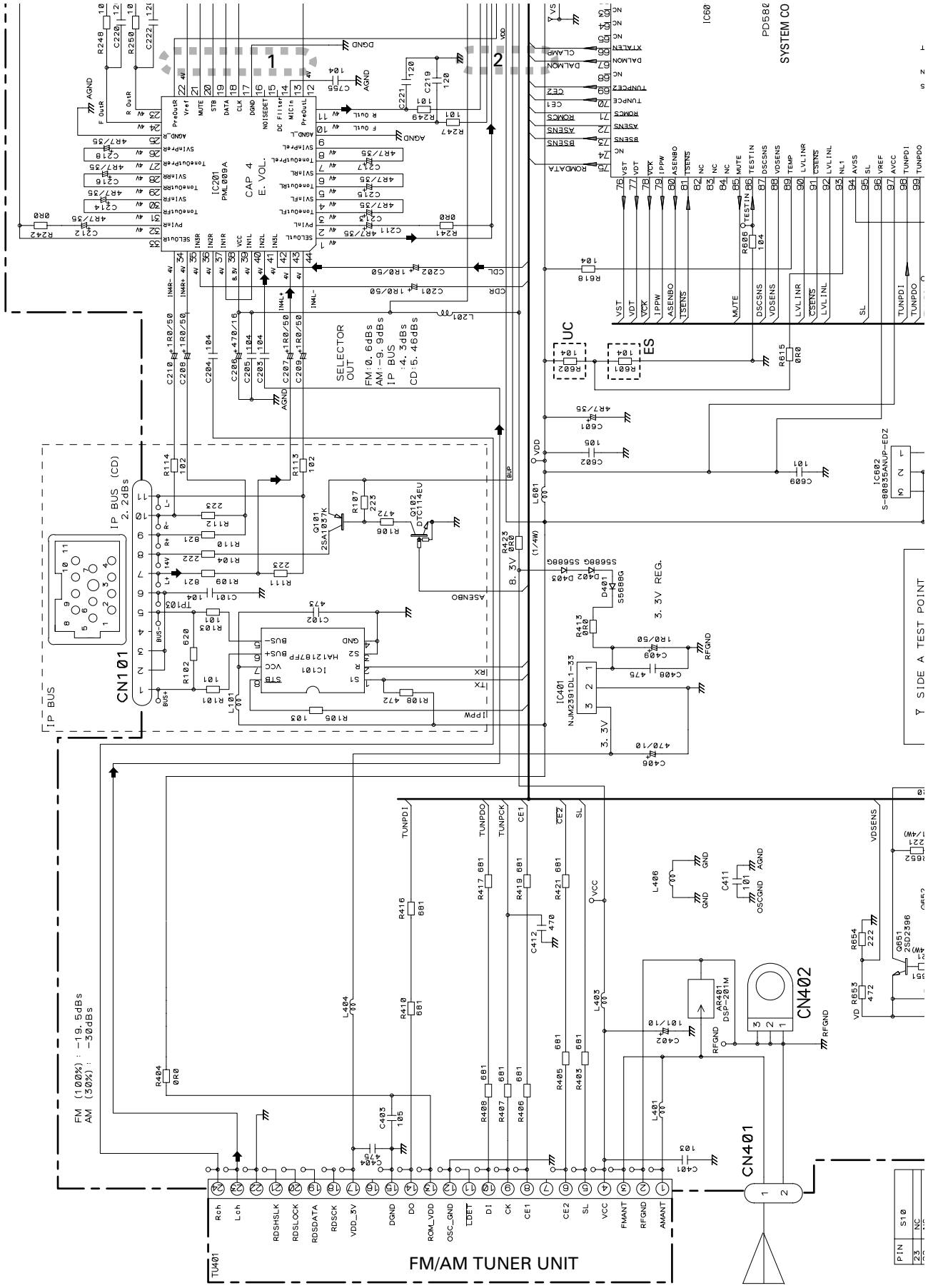
For resistors and capacitors in the circuit diagrams, their resistance values or capacitance values are expressed in codes:

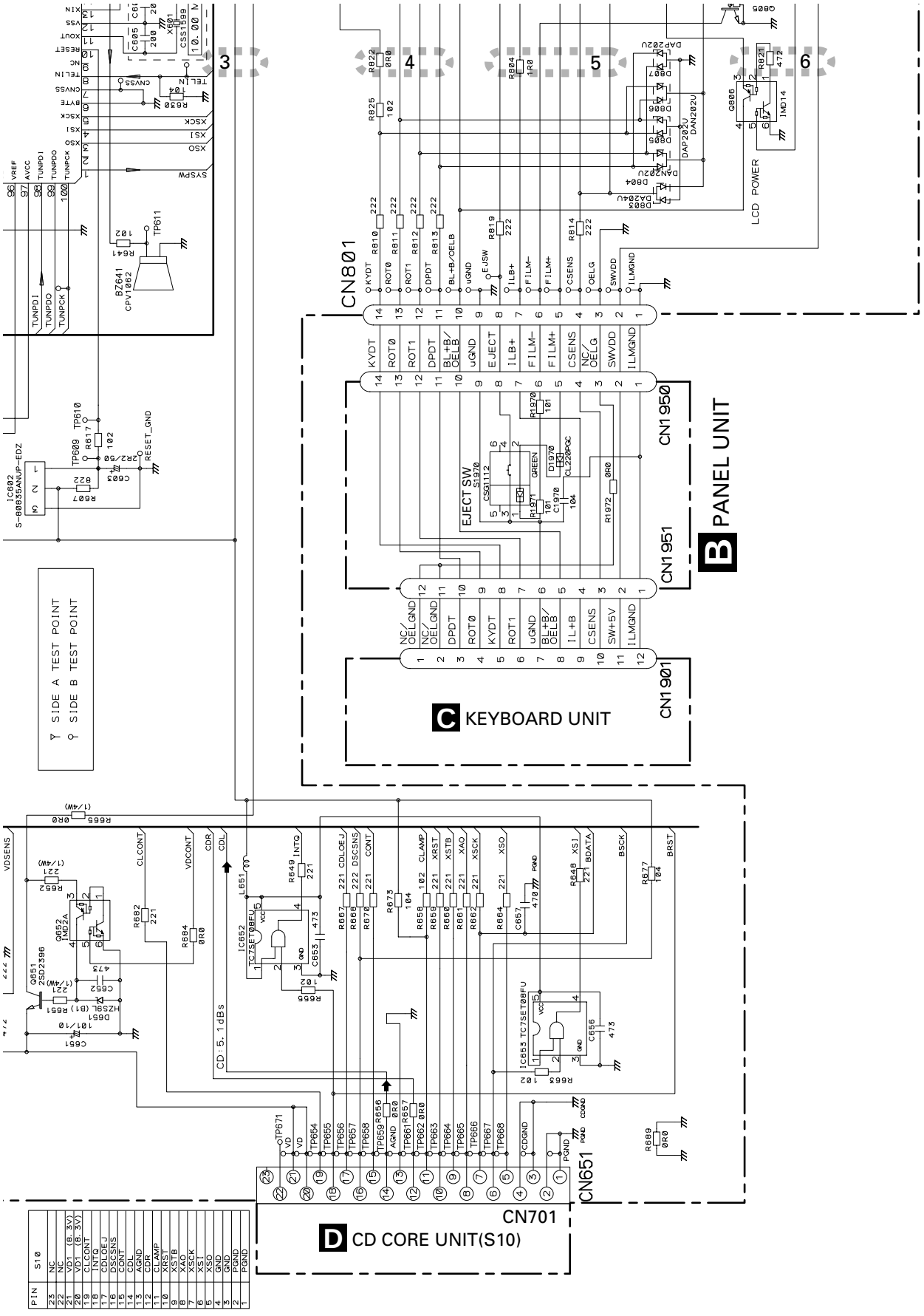
Ex. *Resistors

Code	Practical value
123	12k ohms
103	10k ohms

*Capacitors

Code	Practical value
103	0.01uF
101/10	100uF/10V

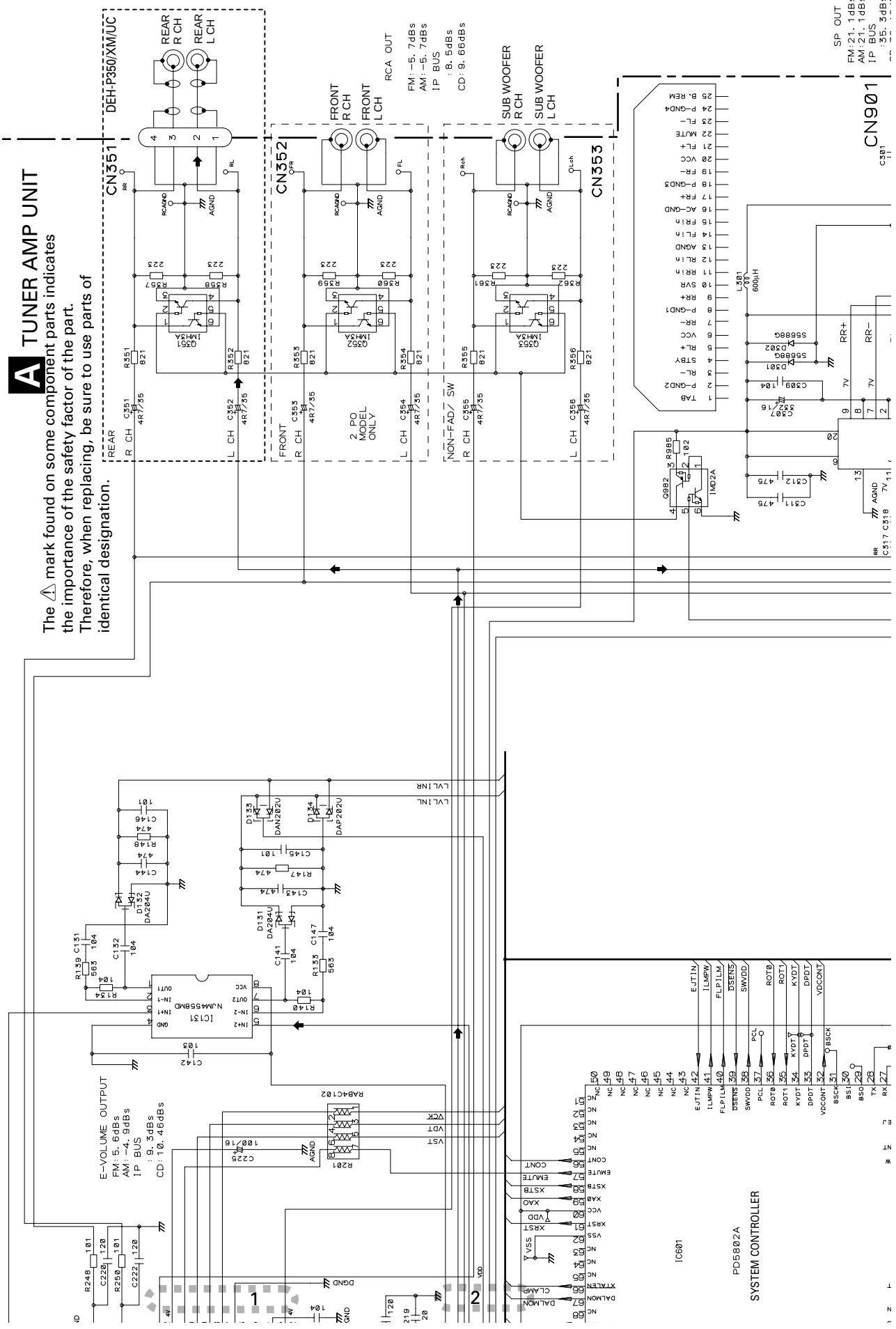

IC201
PML009A
CAP 4
E. VOL.
SELECTOR
OUT
FM:0.6dBs
AM:-9.9dBs
IP BUS
:4.3dBs
CD:5.46dBs
IP BUS (CD)
2.2dBs
CN101
IP BUS
IC101
HA12187FP
IC401
NJM2391DL1-33
3.3V REG.
IC602
S-80835ANUP-EDZ
IC601
PD5802
SYSTEM CO
CN402
CN401
FM/AM TUNER UNIT
TU401
FM (100%) : -19.5dBs
AM (30%) : -30dBs
SIDE A TEST POINT


A-b
CN801
B PANEL UNIT
CN1950
CN1951
C KEYBOARD UNIT
CN1901
D CD CORE UNIT(S10)
CN701
CN651
LCD POWER
EJECT SW
SIDE A TEST POINT
SIDE B TEST POINT
CD: 5. 1dBs
A-a B

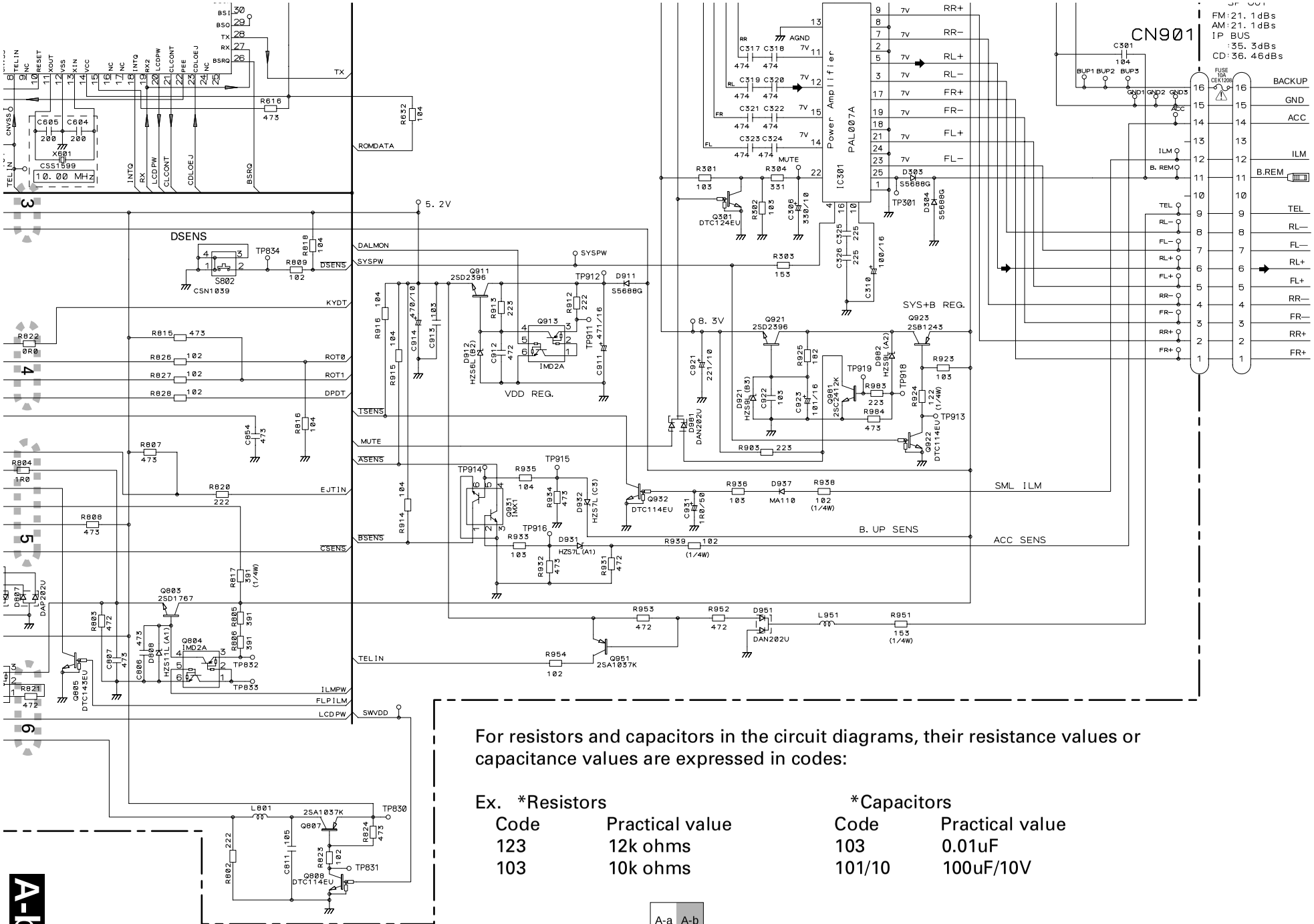
A TUNER AMP UNIT

The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

A-a A-b



A-b



For resistors and capacitors in the circuit diagrams, their resistance values or capacitance values are expressed in codes:

Ex. *Resistors

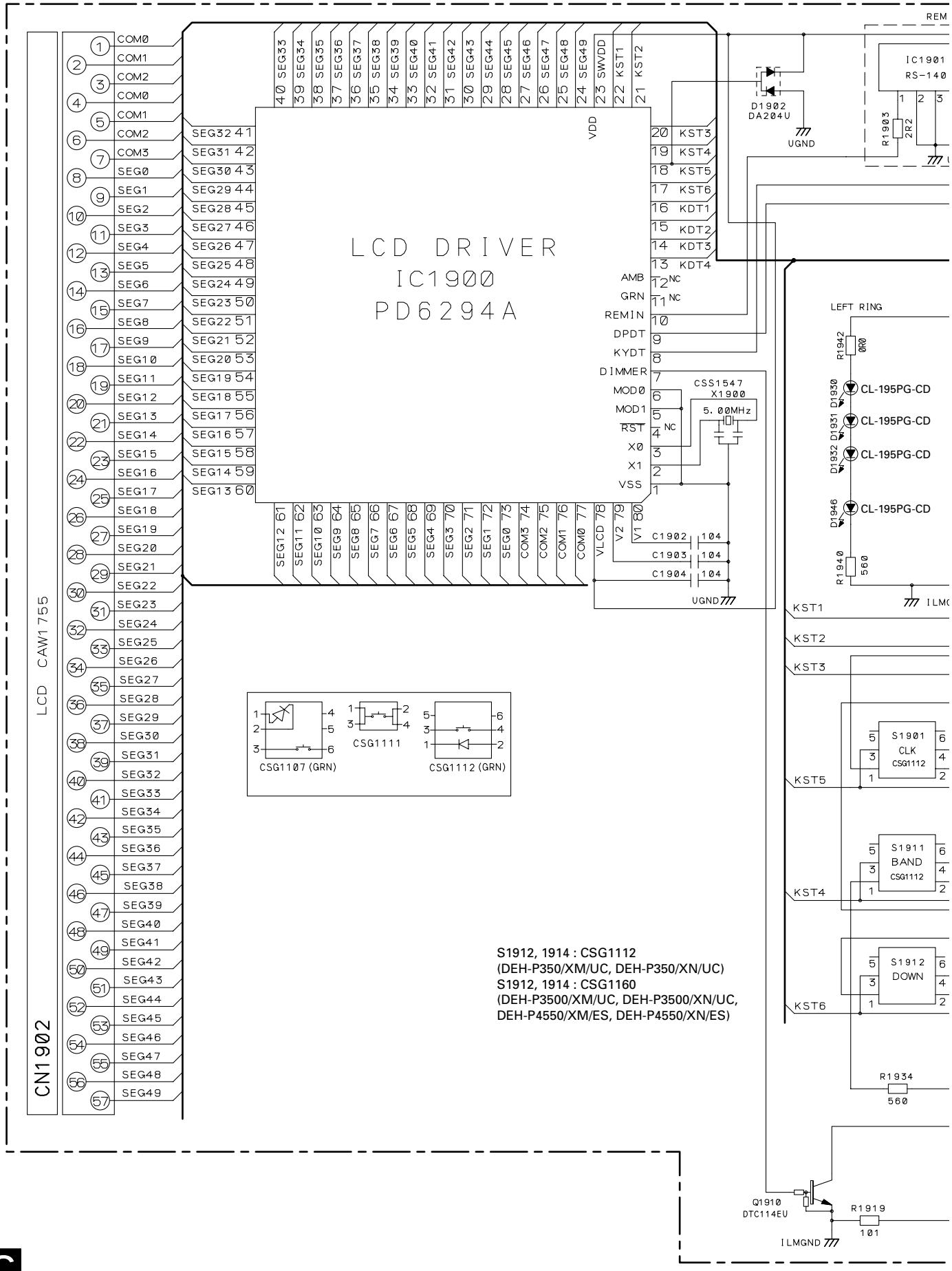
Code	Practical value
123	12k ohms
103	10k ohms

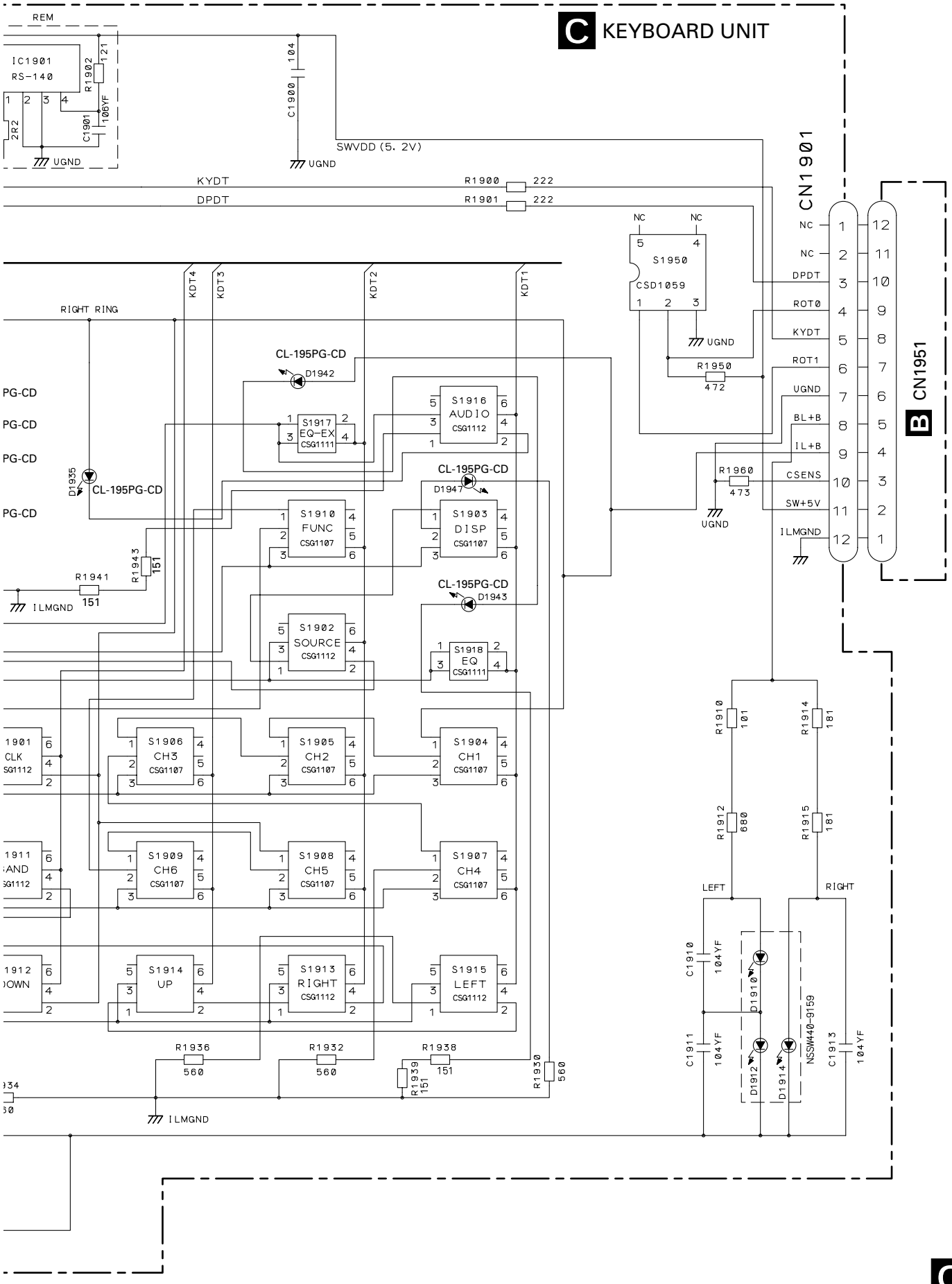
*Capacitors

Code	Practical value
103	0.01uF
101/10	100uF/10V

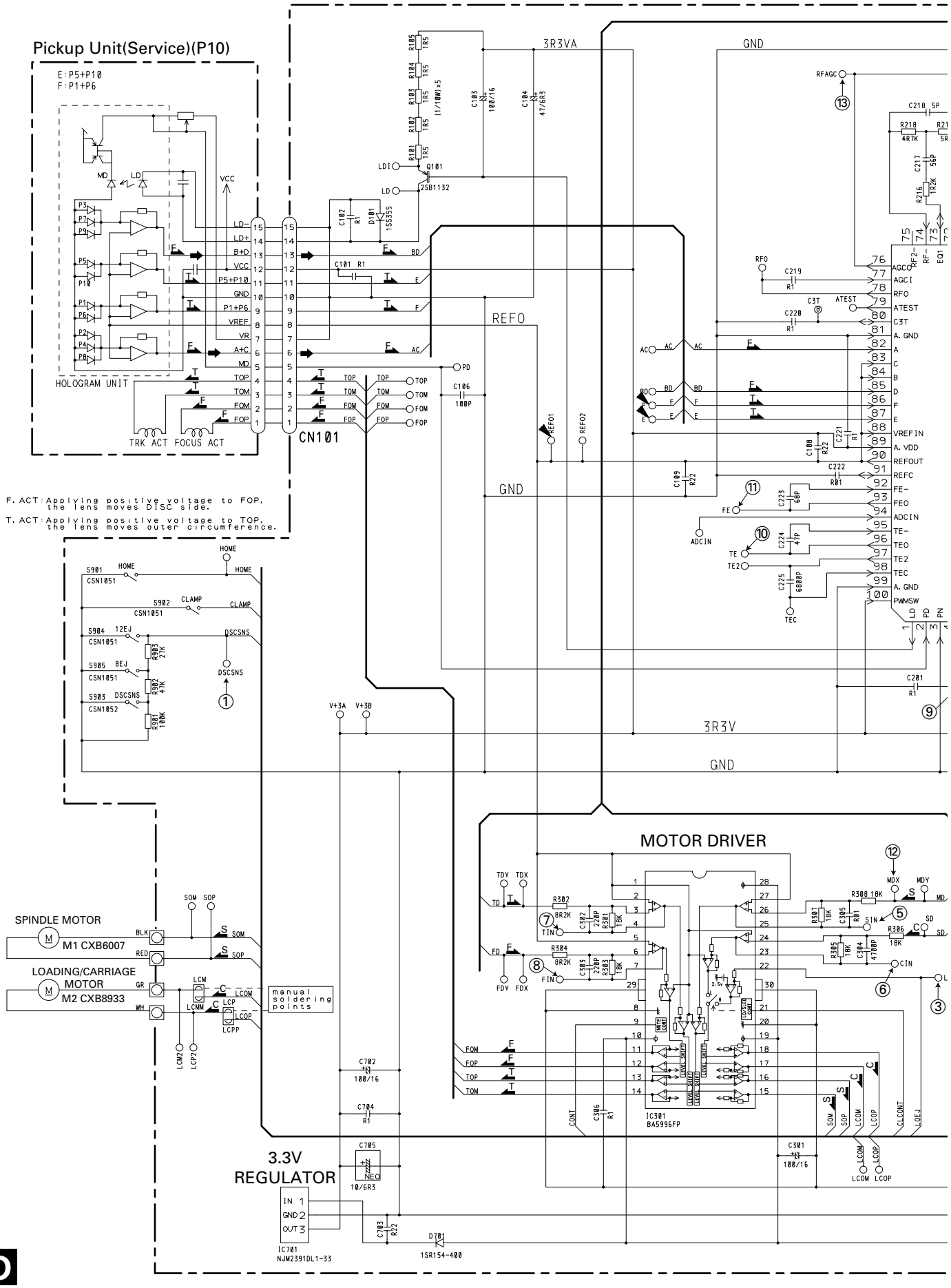
A-a A-b

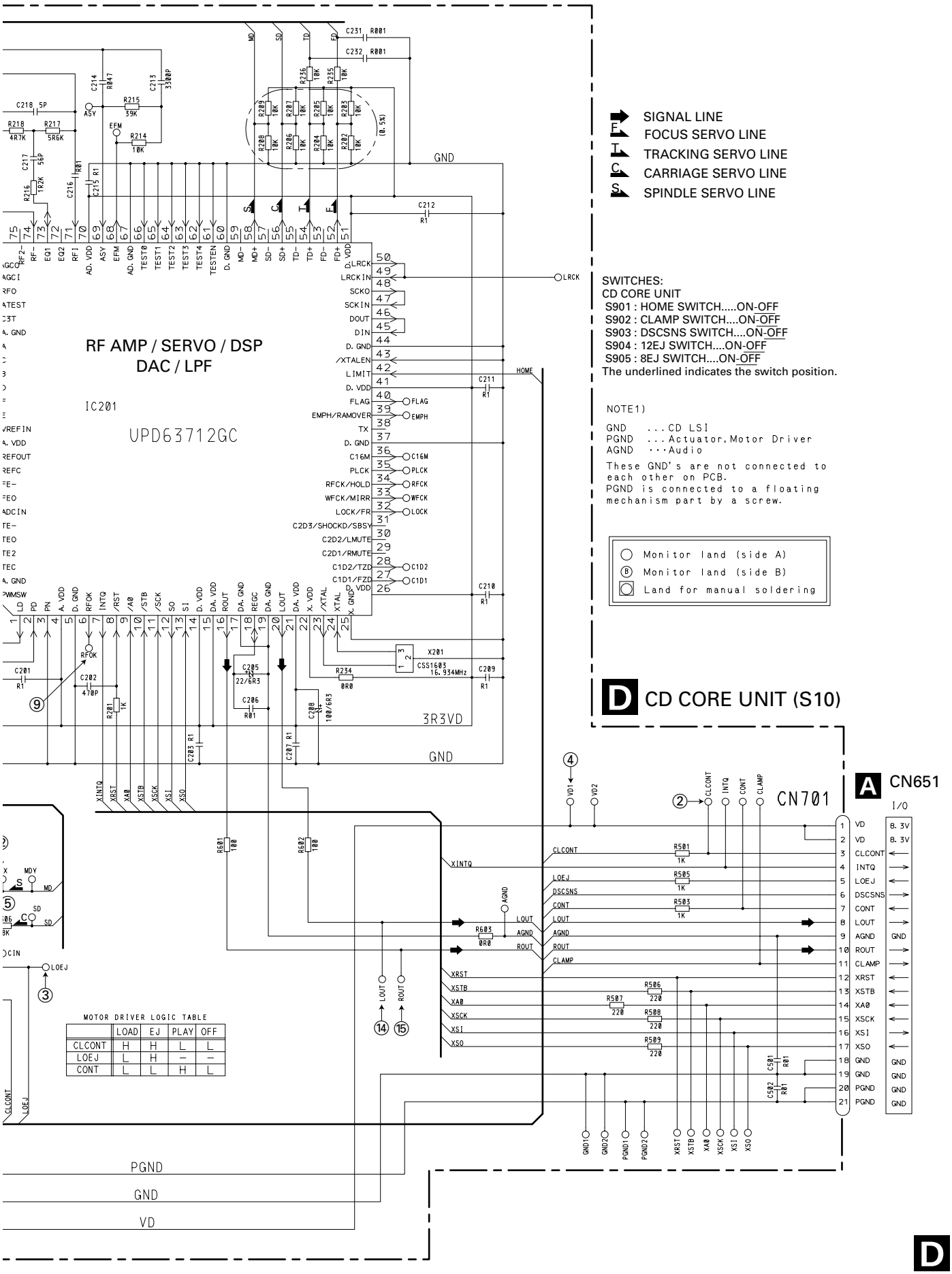
3.3 KEYBOARD UNIT




C KEYBOARD UNIT
REM
IC1901
RS-140
R1902
121
C1901
106YF
2R2
UGND
C1900
104
SWVDD (5. 2V)
KYDT
DPDT
R1900
222
R1901
222
CN1901
B CN1951
NC
NC
DPDT
ROT0
KYDT
ROT1
UGND
BL+B
IL+B
CSENS
SW+5V
ILMGND
S1950
CSD1059
R1950
472
R1960
473
KDT4
KDT3
KDT2
KDT1
RIGHT RING
PG-CD
CL-195PG-CD
D1942
D1935
D1947
D1943
S1916
AUDIO
CSG1112
S1917
EQ-EX
CSG1111
S1910
FUNC
CSG1107
S1903
DISP
CSG1107
S1902
SOURCE
CSG1112
S1918
EQ
CSG1111
R1941
151
R1943
151
ILMGND
S1906
CH3
CSG1107
S1905
CH2
CSG1107
S1904
CH1
CSG1107
S1909
CH6
CSG1107
S1908
CH5
CSG1107
S1907
CH4
CSG1107
S1914
UP
S1913
RIGHT
CSG1112
S1915
LEFT
CSG1112
R1936
560
R1932
560
R1938
151
R1939
151
R1930
560
R1910
101
R1914
181
R1912
680
R1915
181
LEFT
RIGHT
C1910
104YF
C1911
104YF
C1913
104YF
D1910
D1912
D1914
NSW440-9159

3.4 CD MECHANISM MODULE



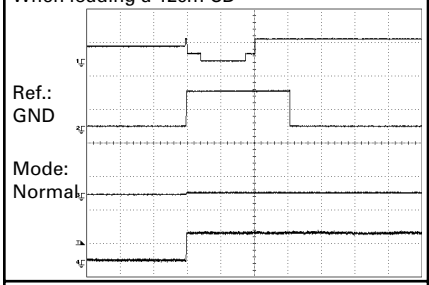

SIGNAL LINE
FOCUS SERVO LINE
TRACKING SERVO LINE
CARRIAGE SERVO LINE
SPINDLE SERVO LINE
SWITCHES:
CD CORE UNIT
S901 : HOME SWITCH.....ON-OFF
S902 : CLAMP SWITCH....ON-OFF
S903 : DSCSNS SWITCH....ON-OFF
S904 : 12EJ SWITCH....ON-OFF
S905 : 8EJ SWITCH....ON-OFF
The underlined indicates the switch position.
NOTE1)
GND ...CD LSI
PGND ...Actuator, Motor Driver
AGND ···Audio
These GND's are not connected to each other on PCB.
PGND is connected to a floating mechanism part by a screw.
Monitor land (side A)
Monitor land (side B)
Land for manual soldering
RF AMP / SERVO / DSP
DAC / LPF
IC201
UPD63712GC
D CD CORE UNIT (S10)
A CN651
I/O
CN701
MOTOR DRIVER LOGIC TABLE
LOAD EJ PLAY OFF
CLCONT H H L L
LOEJ L H – –
CONT L L H L
GND
PGND
VD
3R3VD

● Waveforms

Note : 1. The encircled numbers denote measuring points in the circuit diagram.
2. Reference voltage REFO1(1.65V)

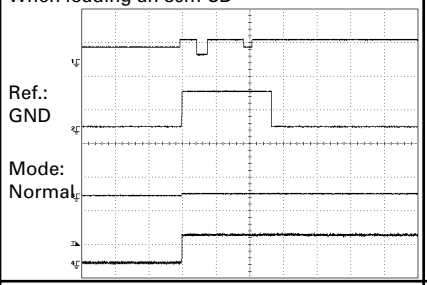
① DSCSNS 5V/div 500ms/div
② CLCONT 5V/div
③ LOEJ 5V/div
④ VD 10V/div

When loading a 12cm CD



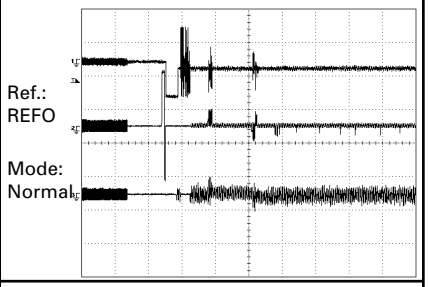
① DSCSNS 5V/div 500ms/div
② CLCONT 5V/div
③ LOEJ 5V/div
④ VD 10V/div

When loading an 8cm CD



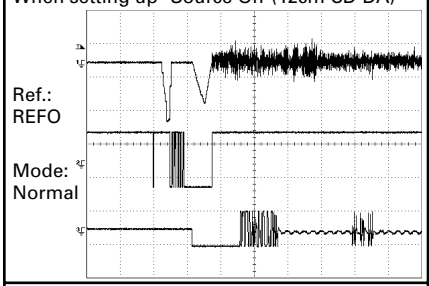
⑤ SIN 1V/div 2s/div
⑥ CIN 500mV/div
⑦ TIN 500mV/div

When setting up after loading a 12cm CD-DA disc



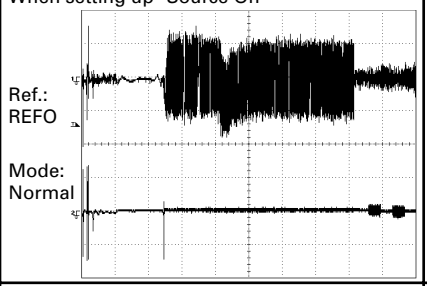
⑧ FIN 200mV/div 500ms/div
⑨ RFOK 2V/div
⑤ SIN 2V/div

When setting up "Source On"(12cm CD-DA)



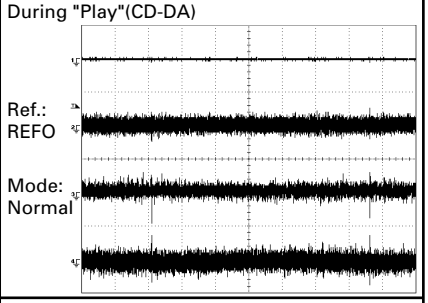
⑩ TE 500mV/div 200ms/div
⑪ FE 500mV/div

When setting up "Source On"



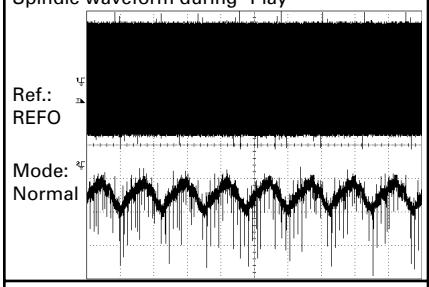
⑪ FE 500mV/div 20ms/div
⑧ FIN 500mV/div
⑩ TE 500mV/div
⑦ TIN 500mV/div

During "Play"(CD-DA)



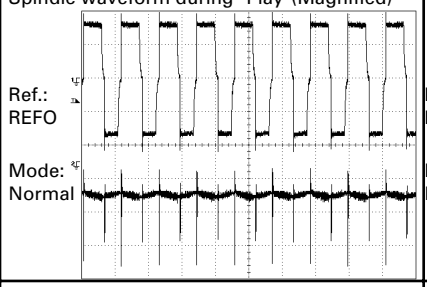
⑫ MDX 500mV/div 5ms/div
⑤ SIN 1V/div

Spindle waveform during "Play"



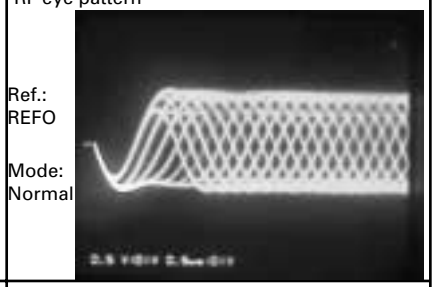
⑫ MDX 500mV/div 5µs/div
⑤ SIN 1V/div

Spindle waveform during "Play"(Magnified)



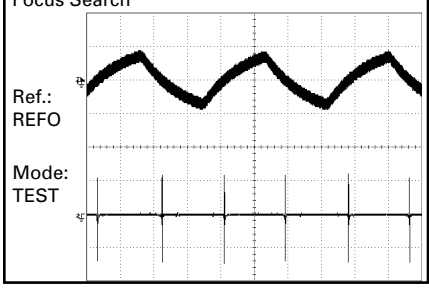
⑬ RFAGC 500mV/div 0.5µs/div

RF eye pattern



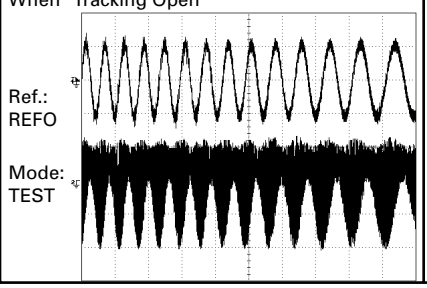
⑧ FIN 500mV/div 200ms/div
⑪ FE 500mV/div

Focus Search



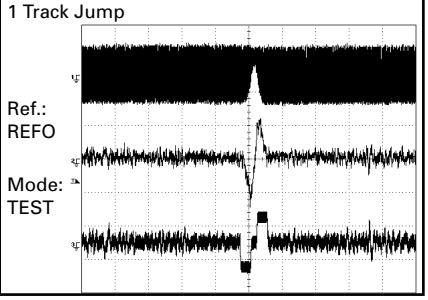
⑩ TE 500mV/div 2ms/div
⑬ RFAGC 500mV/div

When "Tracking Open"



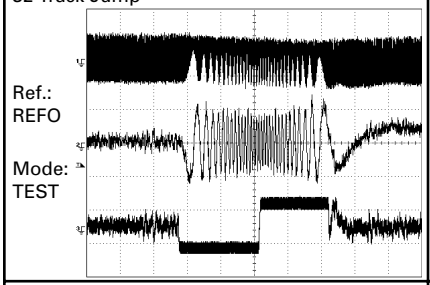
⑬ RFAGC 1V/div 500µs/div
⑩ TE 500mV/div
⑦ TIN 500mV/div

1 Track Jump



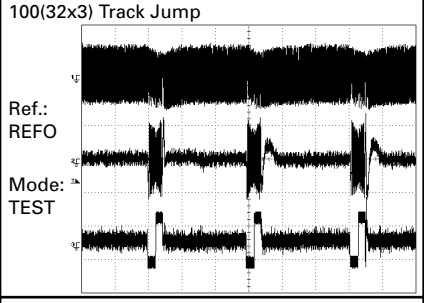
⑬ RFAGC	1V/div	500ms/div
⑩ TE	500mV/div	
⑦ TIN	500mV/div	

32 Track Jump



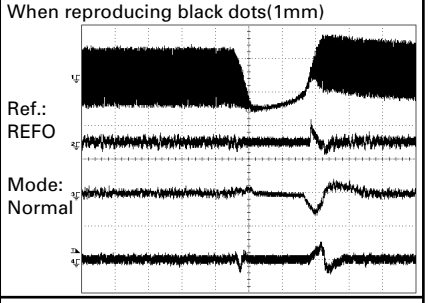
⑬ RFAGC	1V/div	5ms/div
⑩ TE	500mV/div	
⑦ TIN	500mV/div	

100(32x3) Track Jump



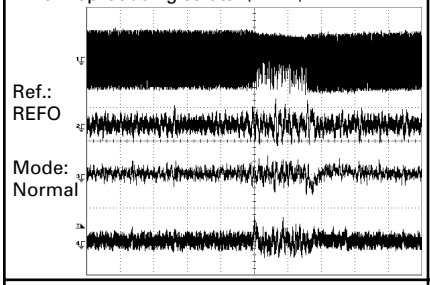
⑬ RFAGC	1V/div	500µs/div
⑦ TIN	1V/div	
⑩ TE	1V/div	
⑧ FIN	1V/div	

When reproducing black dots(1mm)



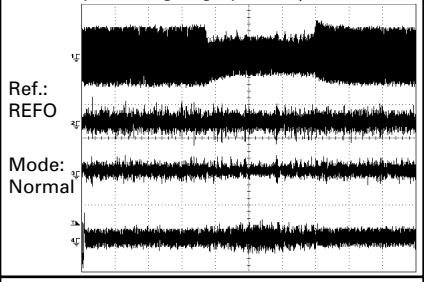
⑬ RFAGC	1V/div	500µs/div
⑩ TE	1V/div	
⑥ CIN	500mV/div	
⑤ SIN	2V/div	

When reproducing scratch(1mm)



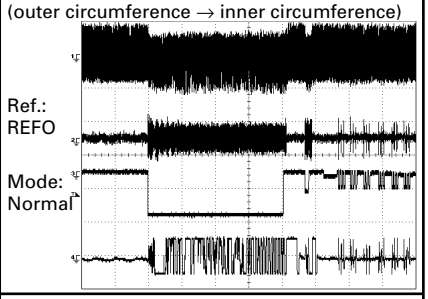
⑬ RFAGC	1V/div	5ms/div
⑩ TE	1V/div	
⑥ CIN	500mV/div	
⑤ SIN	2V/div	

When reproducing fingerprint(65µm)



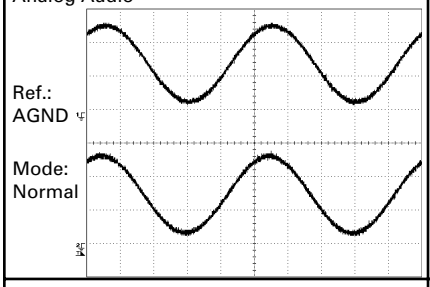
⑬ RFAGC	1V/div	500µs/div
⑩ TE	1V/div	
⑥ CIN	500mV/div	
⑤ SIN	2V/div	

During inside/outside search
(outer circumference → inner circumference)



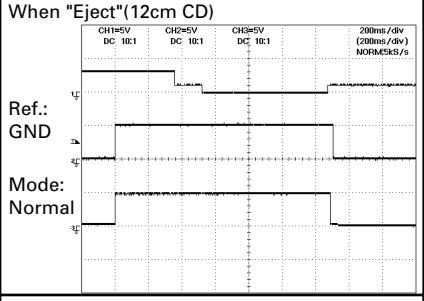
⑭ LOUT	1V/div	200µs/div
⑮ ROUT	1V/div	

Analog Audio



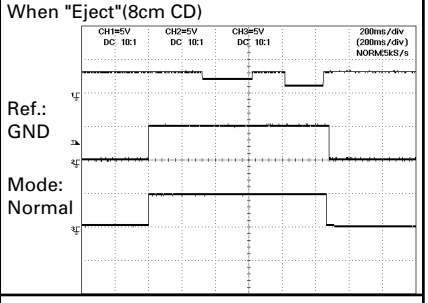
① DSCSNS	5V/div	200ms/div
② CLCONT	5V/div	
③ LOEJ	5V/div	

When "Eject"(12cm CD)



① DSCSNS	5V/div	200ms/div
② CLCONT	5V/div	
③ LOEJ	5V/div	

When "Eject"(8cm CD)

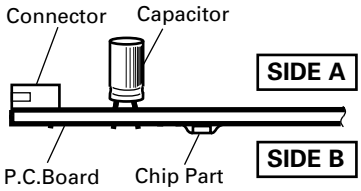


4. PCB CONNECTION DIAGRAM

4.1 TUNER AMP UNIT

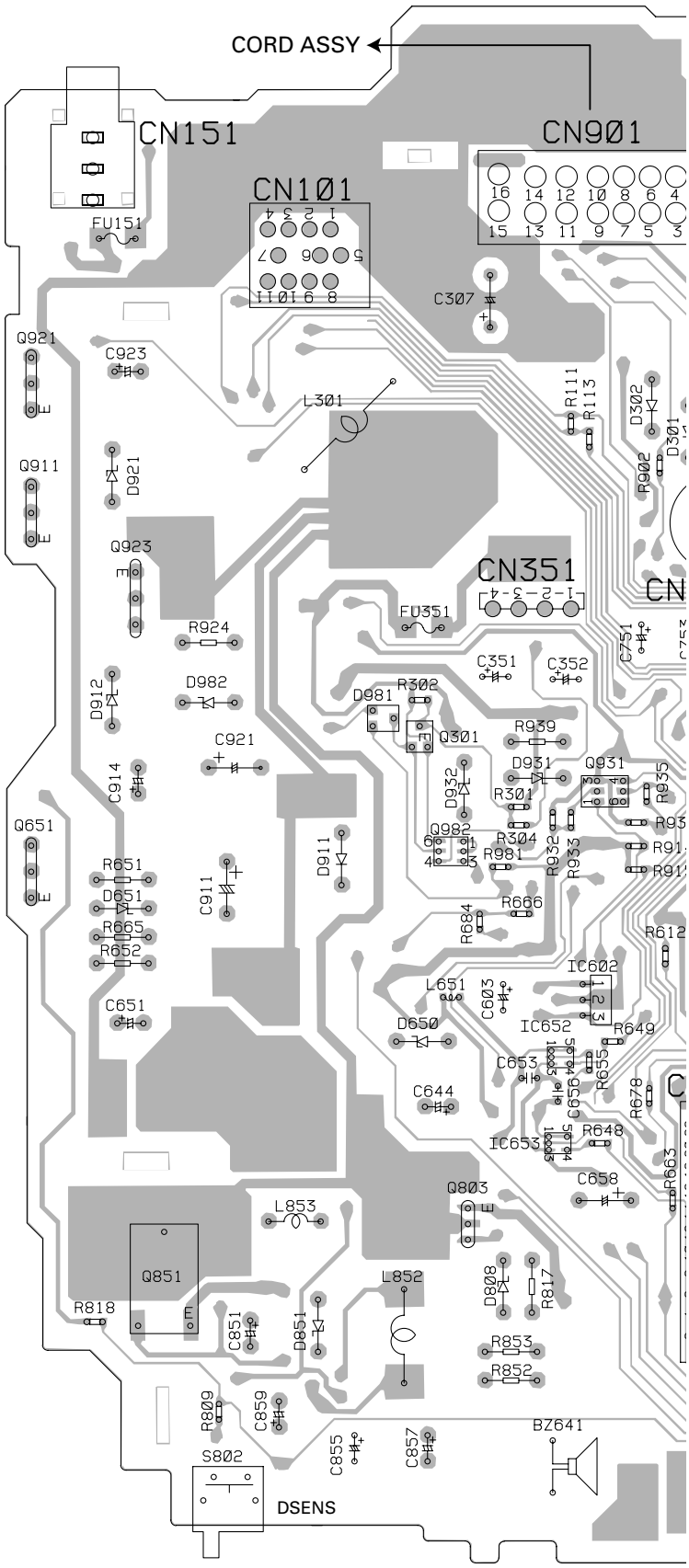
NOTE FOR PCB DIAGRAMS

1. The parts mounted on this PCB include all necessary parts for several destination. For further information for respective destinations, be sure to check with the schematic diagram.
2. Viewpoint of PCB diagrams



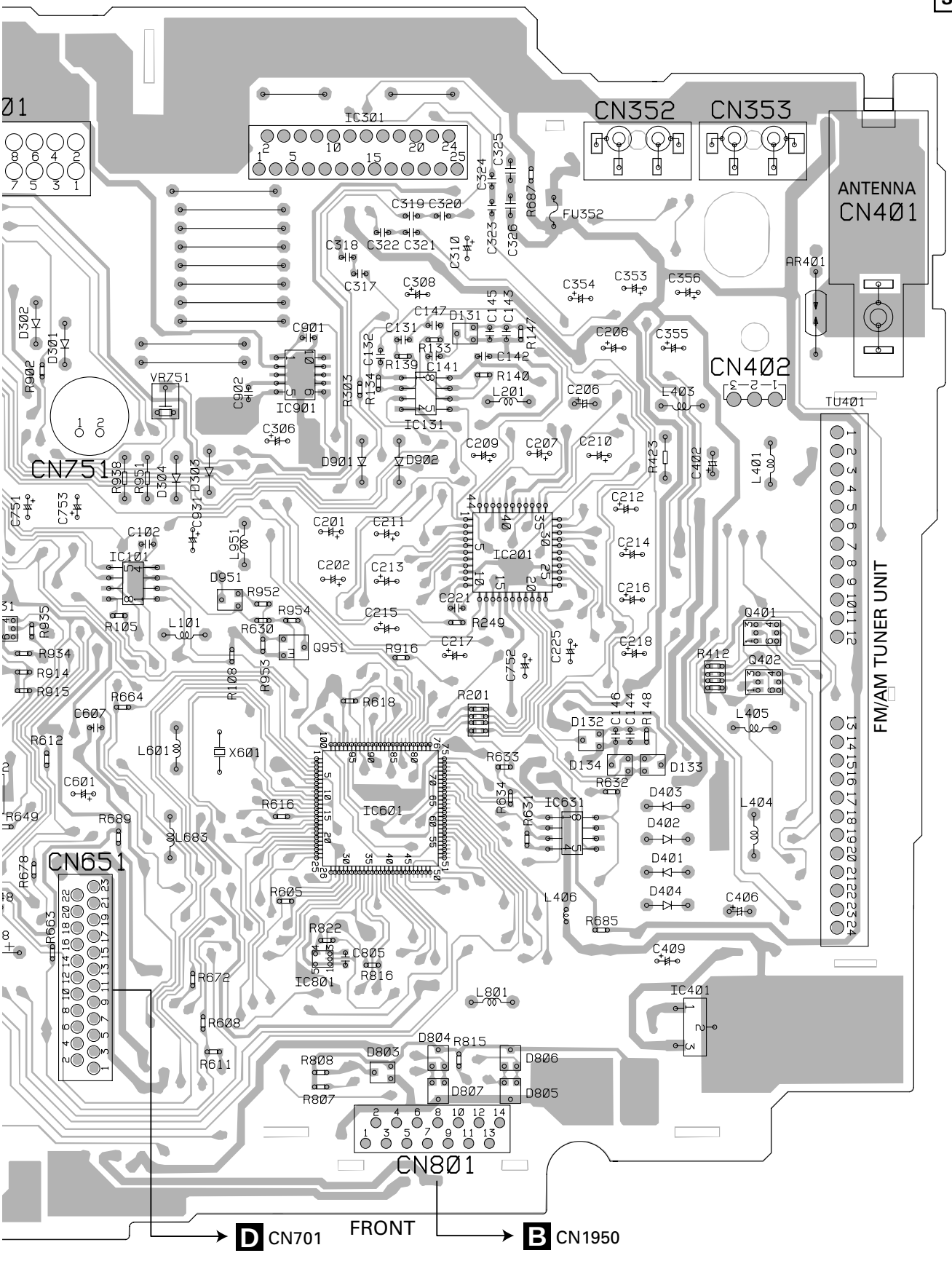
A TUNER AMP UNIT

IC, Q	ADJ
IC301	
Q921	
Q911	
IC901	
Q923 IC131	
IC101 IC201	
Q301	
Q931	
Q401	
Q651 Q951	
Q982 Q402	
IC602	
IC631	
IC601	
IC652	
IC653	
Q803	
IC801	
IC401	
Q851	



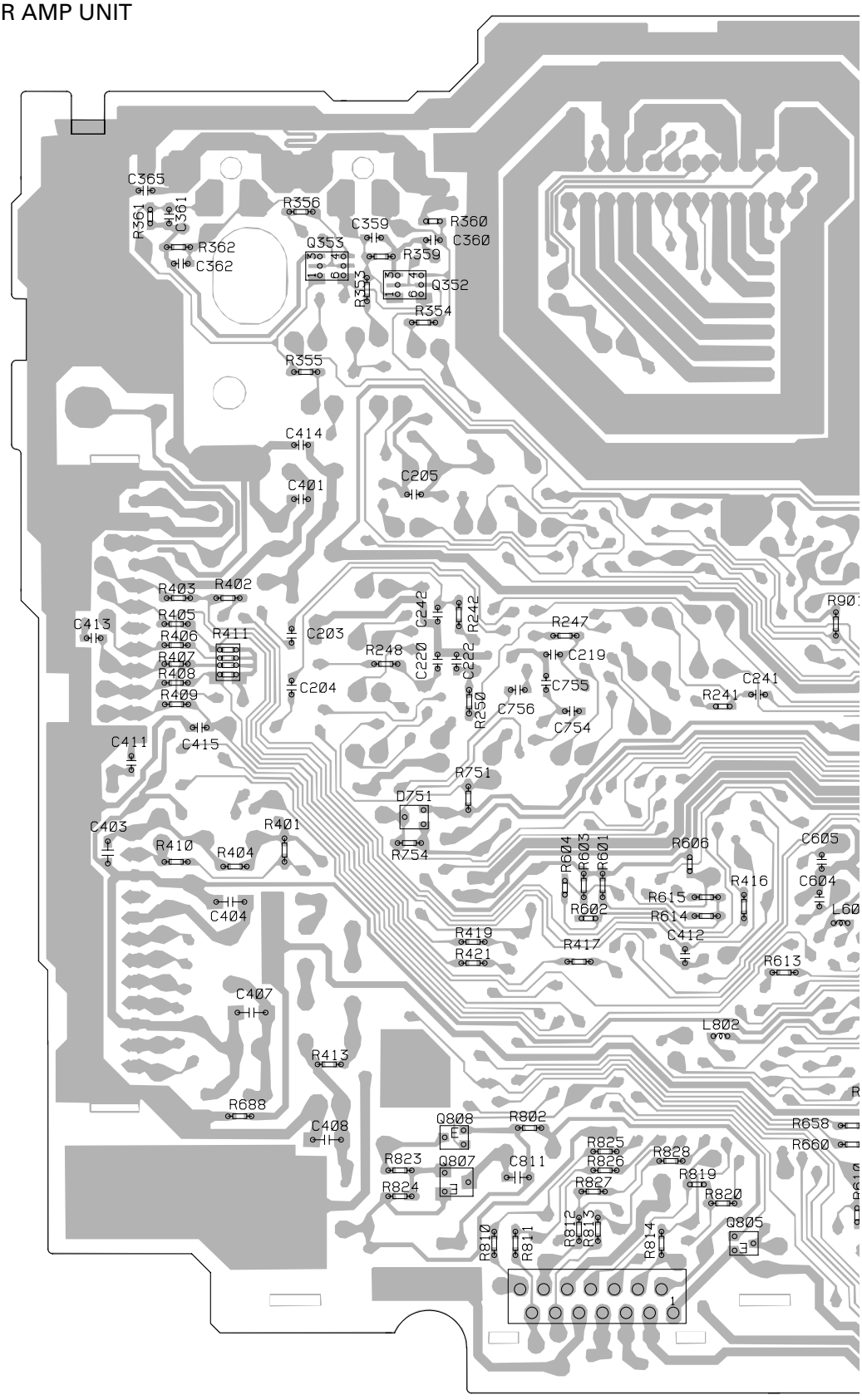
A

SIDE A


CN352
CN353
ANTENNA
CN401
CN402
CN751
CN651
CN801
IC301
IC901
IC131
IC201
IC101
IC601
IC631
IC801
IC401
TU401
FM/AM TUNER UNIT
FU352
VR751
X601
FRONT
D CN701
B CN1950

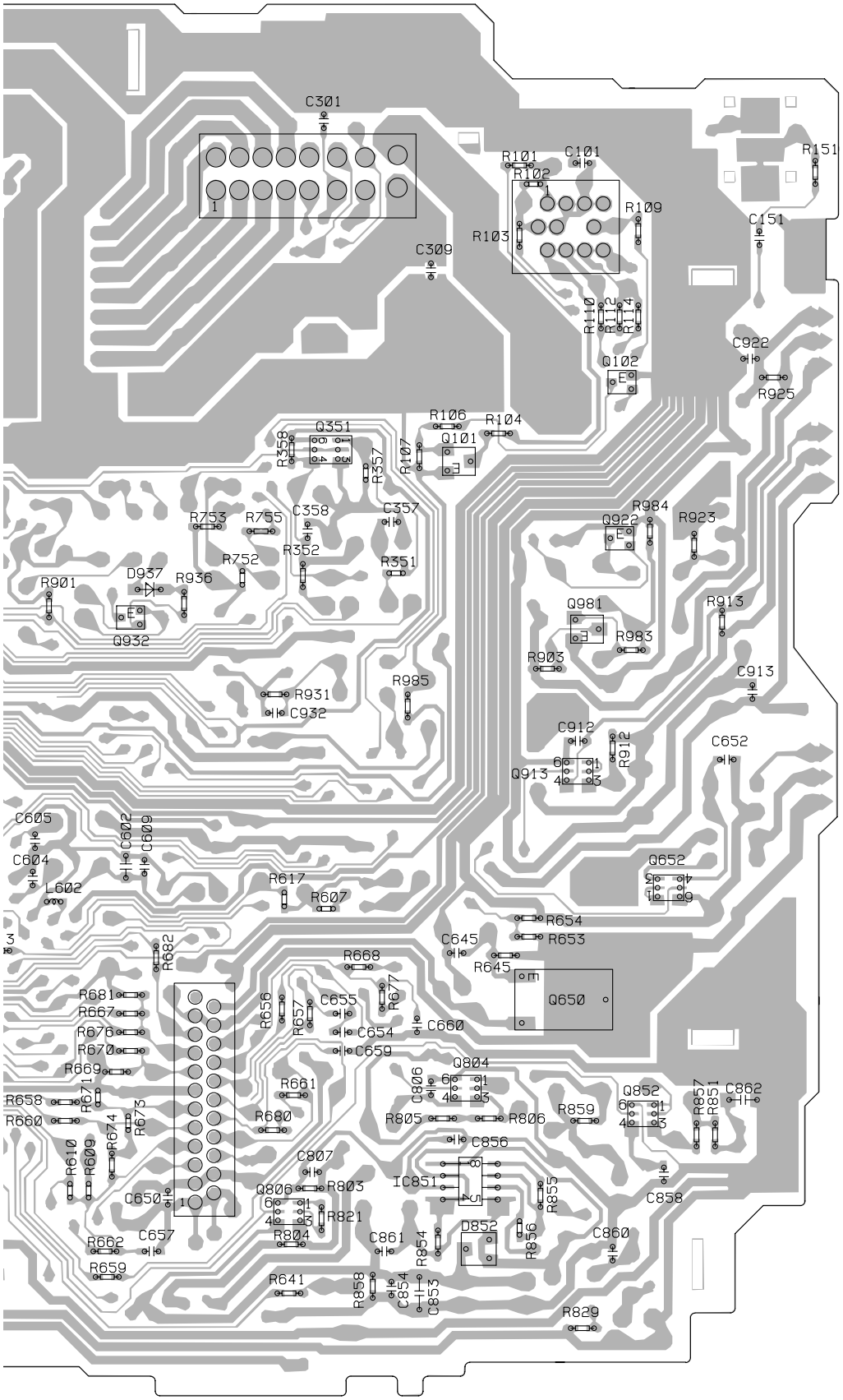
A

A TUNER AMP UNIT



A

SIDE B

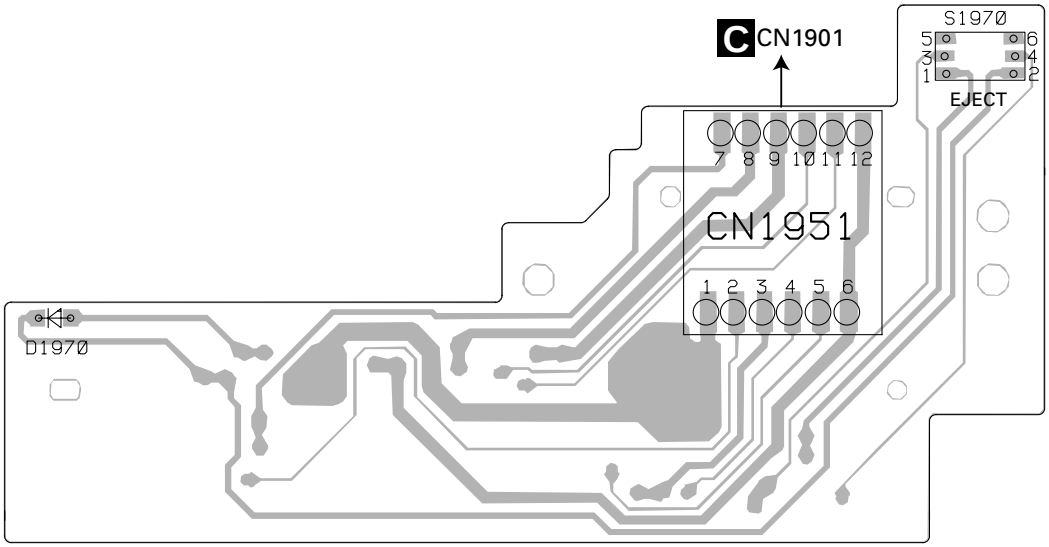

C301
R101
C101
R102
R109
R103
C309
R151
C151
R110
R112
R114
C922
Q102
R925
R106
R104
Q351
Q101
R358
R357
R107
R753
R755
C358
C357
R984
Q922
R923
R752
R352
R351
D937
R936
R901
Q932
Q981
R913
R983
R903
R931
C932
R985
C913
C912
R912
C652
Q913
C605
C604
C602
C609
L602
R617
R607
Q652
R654
R653
C645
R645
R682
R668
R677
Q650
R681
R667
R676
R670
R669
R671
R658
R660
R656
R657
C655
C654
C659
C660
R661
R680
Q804
C806
R805
R806
R859
Q852
R857
R851
C862
C807
Q806
R803
IC851
R855
C856
C858
C650
R821
R804
C657
R662
R659
C861
R854
D852
R856
C860
R641
R858
C854
C853
R829
IC, Q
Q353
Q352
Q102
Q351
Q101
Q922
Q981
Q932
Q913
Q652
Q650
Q804
Q852
Q808
Q807
IC851
Q805
Q806

A

4.2 PANEL UNIT

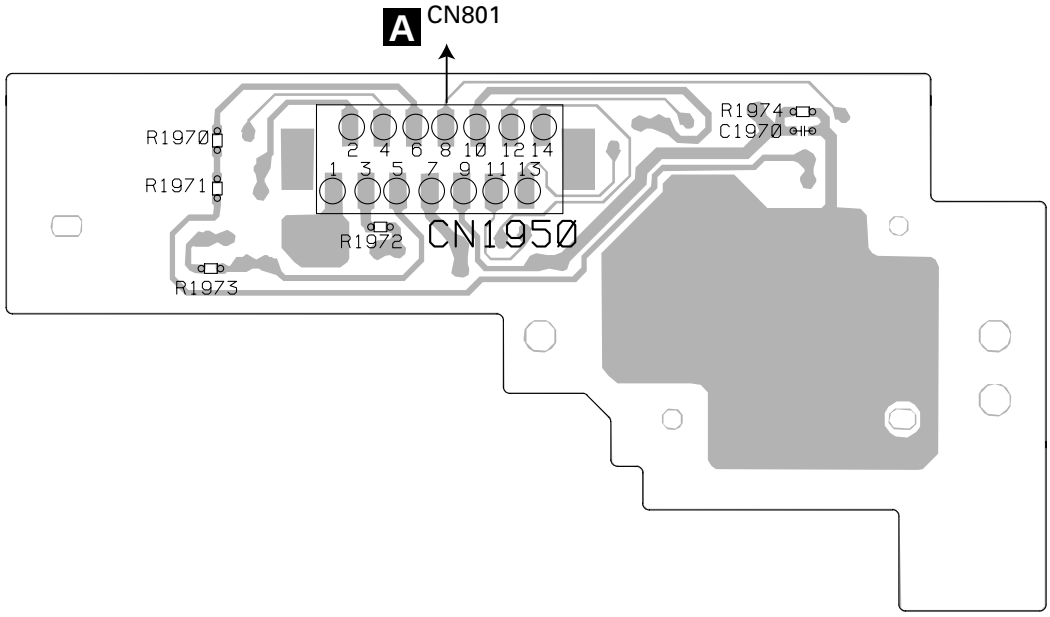
B PANEL UNIT

SIDE A



B PANEL UNIT

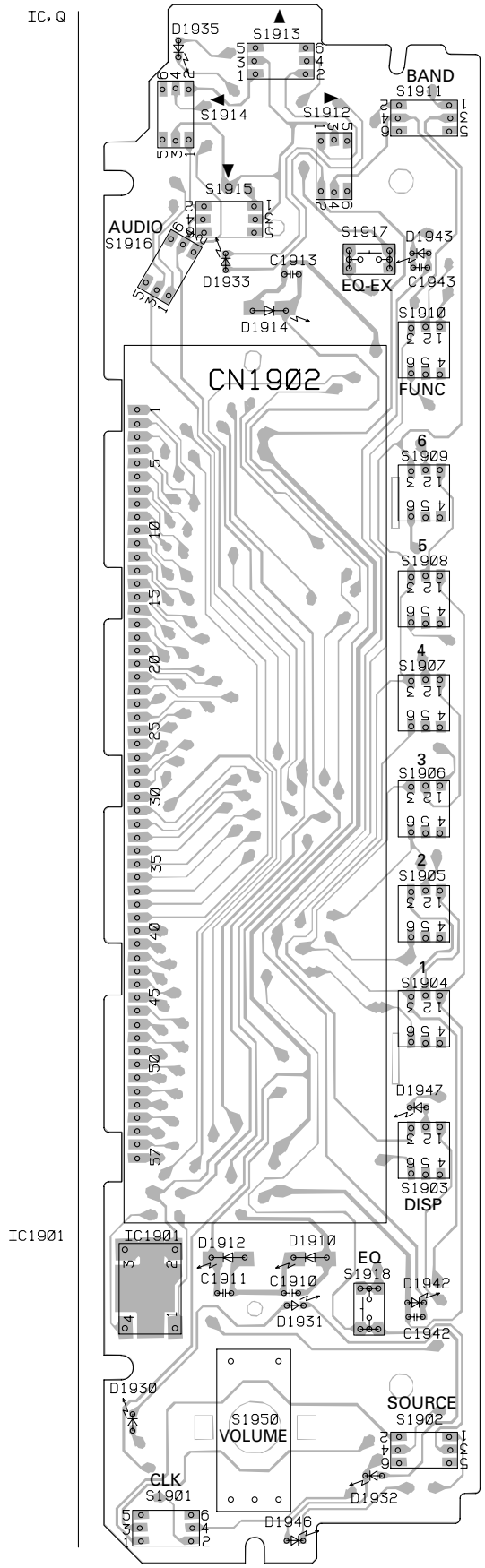
SIDE B



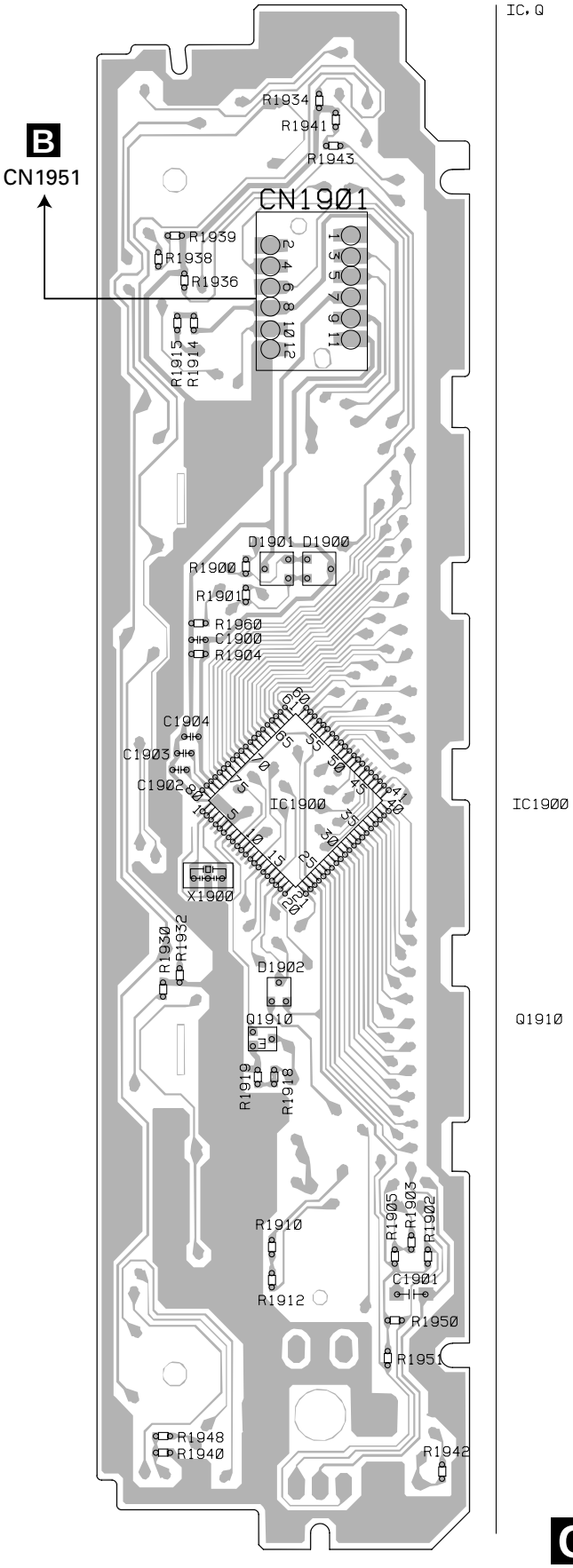
B

4.3 KEYBOARD UNIT

C KEYBOARD UNIT **SIDE A**



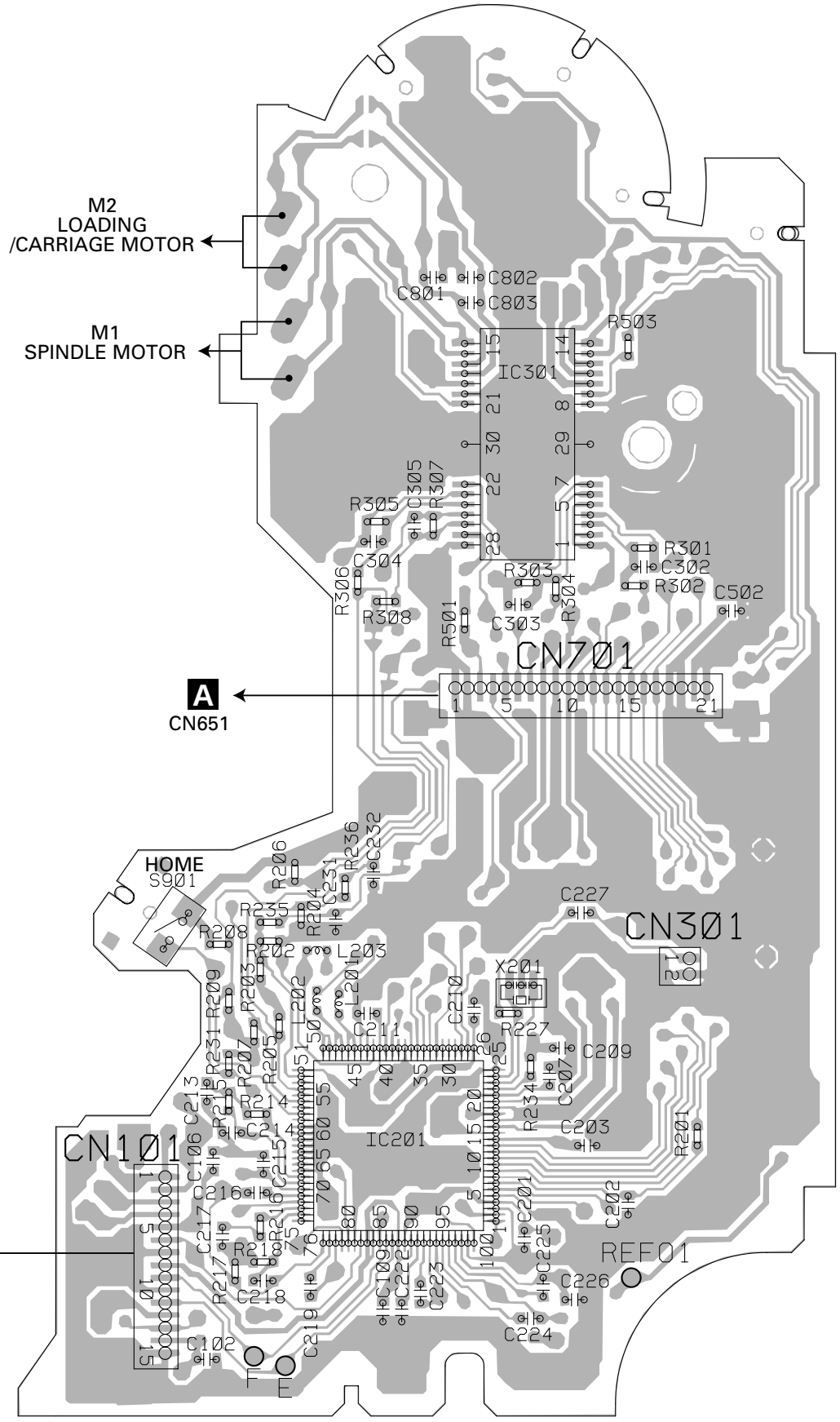
C KEYBOARD UNIT **SIDE B**



4.4 CD MECHANISM MODULE

D CD CORE UNIT(S10)

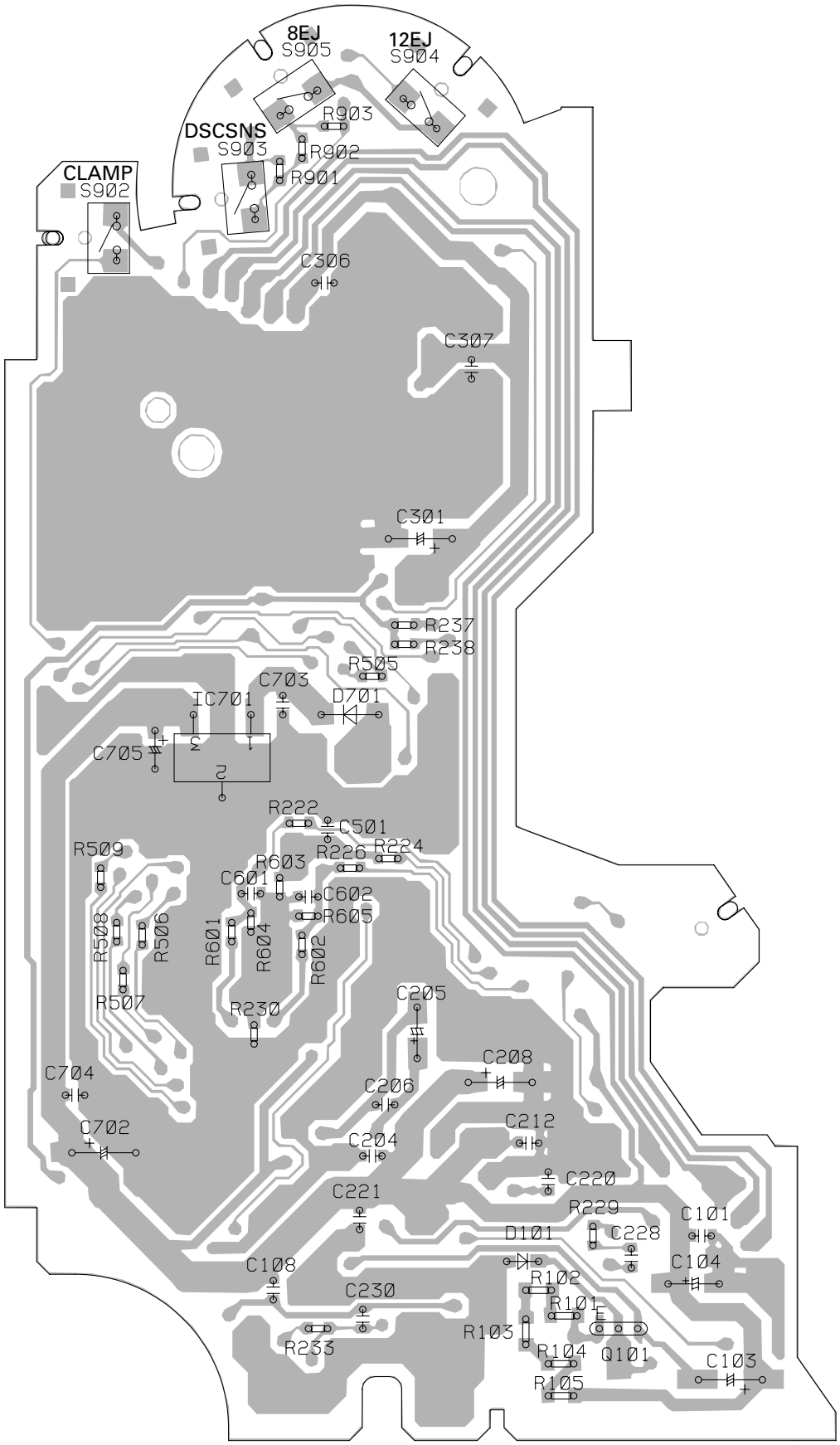
SIDE A



D

D CD CORE UNIT(S10)

SIDE B



5. ELECTRICAL PARTS LIST

NOTES:

- Parts whose parts numbers are omitted are subject to being not supplied.
- The part numbers shown below indicate chip components.

Chip Resistor

RS1/○S○○○J,RS1/○○S○○○J

Chip Capacitor (except for CQS.....)

CKS....., CCS....., CSZS.....

A Unit Number : CWM8593(DEH-P350)
CWM8594(DEH-P3500)
CWM8596(DEH-P4550)

Unit Name : Tuner Amp Unit

MISCELLANEOUS

=====Circuit Symbol and No.		===Part Name	Part No.
IC	101	IC	HA12187FP
IC	131	IC	NJM4558MD
IC	201	IC	PML009A
IC	301	IC	PAL007A
IC	401	IC	NJM2391DL1-33
IC	601	IC	PD5802A
IC	602	IC	S-80835ANUP-EDZ
IC	652	IC	TC7SET08FU
IC	653	IC	TC7SET08FU
Q	101	Transistor	2SA1037K
Q	102	Transistor	DTC114EU
Q	301	Transistor	DTC124EU
Q	351	Transistor(DEH-P350)	IMH3A
Q	352	Transistor	IMH3A
Q	353	Transistor	IMH3A
Q	651	Transistor	2SD2396
Q	652	Transistor	IMD2A
Q	803	Transistor	2SD1767
Q	804	Transistor	IMD2A
Q	805	Transistor	DTC143EU
Q	806	Transistor	IMD14
Q	807	Transistor	2SA1037K
Q	808	Transistor	DTC114EU
Q	911	Transistor	2SD2396
Q	913	Transistor	IMD2A
Q	921	Transistor	2SD2396
Q	922	Transistor	DTC114EU
Q	923	Transistor	2SB1243
Q	931	Transistor	IMX1
Q	932	Transistor	DTC114EU
Q	951	Transistor	2SA1037K
Q	981	Transistor	2SC2412K
Q	982	Transistor	IMD2A
D	131	Diode Network	DA204U
D	132	Diode Network	DA204U
D	133	Diode	DAN202U
D	134	Diode	DAP202U
D	301	Diode	S5688G
D	302	Diode	S5688G
D	303	Diode	S5688G
D	304	Diode	S5688G
D	401	Diode	S5688G
D	402	Diode	S5688G
D	403	Diode	S5688G
D	651	Diode	HZS9L(B1)
D	803	Diode Network	DA204U
D	804	Diode	DAN202U
D	805	Diode	DAP202U
D	806	Diode	DAN202U
D	807	Diode	DAP202U
D	808	Diode	HZS11L(A1)
D	911	Diode	S5688G
D	912	Diode	HZS6L(B2)
D	921	Diode	HZS9L(B3)
D	931	Diode	HZS7L(A1)
D	932	Diode	HZS7L(C3)
D	937	Diode	MA110
D	951	Diode	DAN202U
D	981	Diode	DAN202U
D	982	Diode	HZS9L(A2)
L	101	Inductor	LAU2R2K
L	201	Ferri-Inductor	LAU4R7K
L	301	Choke Coil 600µH	CTH1280
L	401	Ferri-Inductor	LAU4R7K
L	403	Inductor	LAU1R0K
L	404	Inductor	LAU1R0K
L	406	Inductor	CTF1385
L	601	Ferri-Inductor	LAU100K
L	651	Inductor	CTF1382
L	801	Inductor	LAU2R2K
L	951	Inductor	LAU2R2K
X	601	Radiator 10.00MHz	CSS1599
S	802	Switch(DSENS)	CSN1039
BZ	641	Buzzer	CPV1062
AR	401	Arrester	DSP-201M
		FM/AM Tuner Unit	CWE1646
		Fuse 10A	CEK1208

RESISTORS

R	101		RS1/16S101J
R	102		RS1/16S620J
R	103		RS1/16S101J
R	104		RS1/16S222J
R	105		RS1/16S103J
R	106		RS1/16S472J
R	107		RS1/16S223J
R	108		RS1/16S472J
R	109		RS1/16S821J
R	110		RS1/16S821J
R	111		RS1/16S223J
R	112		RS1/16S223J
R	113		RS1/16S102J
R	114		RS1/16S102J
R	133		RS1/16S563J
R	134		RS1/16S104J
R	139		RS1/16S563J
R	140		RS1/16S104J
R	147		RS1/16S474J
R	148		RS1/16S474J
R	201		RAB4C102J
R	241		RS1/16S0R0J
R	242		RS1/16S0R0J
R	247		RS1/16S101J
R	248		RS1/16S101J

=====Circuit Symbol and No.		===Part Name	Part No.
R	249		RS1/16S101J
R	250		RS1/16S101J
R	301		RS1/16S103J
R	302		RS1/16S103J
R	303		RS1/16S153J
R	304		RS1/16S331J
R	351	(DEH-P350)	RS1/16S821J
R	352	(DEH-P350)	RS1/16S821J
R	353		RS1/16S821J
R	354		RS1/16S821J
R	355		RS1/16S821J
R	356		RS1/16S821J
R	357	(DEH-P350)	RS1/16S223J
R	358	(DEH-P350)	RS1/16S223J
R	359		RS1/16S223J
R	360		RS1/16S223J
R	361		RS1/16S223J
R	362		RS1/16S223J
R	403		RS1/16S681J
R	404		RS1/16S0R0J
R	405		RS1/16S681J
R	406		RS1/16S681J
R	407		RS1/16S681J
R	408		RS1/16S681J
R	410		RS1/16S681J
R	413		RS1/16S0R0J
R	416		RS1/16S681J
R	417		RS1/16S681J
R	419		RS1/16S681J
R	421		RS1/16S681J
R	423		RD1/4PU0R0J
R	601	(DEH-P4550)	RS1/16S104J
R	602	(DEH-P350)	RS1/16S104J
		(DEH-P3500)	RS1/16S104J
R	606		RS1/16S104J
R	607		RS1/16S822J
R	615		RS1/16S0R0J
R	616		RS1/16S473J
R	617		RS1/16S102J
R	618		RS1/16S104J
R	630		RS1/16S104J
R	632		RS1/16S104J
R	641		RS1/16S102J
R	648		RS1/16S221J
R	649		RS1/16S221J
R	651		RD1/4PU221J
R	652		RD1/4PU221J
R	653		RS1/16S472J
R	654		RS1/16S222J
R	655		RS1/16S102J
R	656		RS1/16S0R0J
R	657		RS1/16S0R0J
R	658		RS1/16S102J
R	659		RS1/16S221J
R	660		RS1/16S221J
R	661		RS1/16S221J
R	662		RS1/16S221J
R	663		RS1/16S102J
R	664		RS1/16S221J
R	665		RD1/4PU0R0J
R	667		RS1/16S221J
R	668		RS1/16S222J
R	670		RS1/16S221J
R	673		RS1/16S104J
R	677		RS1/16S104J
R	682		RS1/16S221J
R	684		RS1/16S0R0J
R	689		RS1/16S0R0J
R	802		RS1/16S222J
R	803		RS1/16S472J

=====Circuit Symbol and No.		===Part Name	Part No.
R	804		RS1/16S1R0J
R	805		RS1/16S391J
R	806		RS1/16S391J
R	807		RS1/16S473J
R	808		RS1/16S473J
R	809		RS1/16S102J
R	810		RS1/16S222J
R	811		RS1/16S222J
R	812		RS1/16S222J
R	813		RS1/16S222J
R	814		RS1/16S222J
R	815		RS1/16S473J
R	816		RS1/16S104J
R	817		RD1/4PU391J
R	818		RS1/16S104J
R	819		RS1/16S222J
R	820		RS1/16S222J
R	821		RS1/16S472J
R	822		RS1/16S0R0J
R	823		RS1/16S102J
R	824		RS1/16S473J
R	825		RS1/16S102J
R	826		RS1/16S102J
R	827		RS1/16S102J
R	828		RS1/16S102J
R	903		RS1/16S223J
R	912		RS1/16S222J
R	913		RS1/16S223J
R	914		RS1/16S104J
R	915		RS1/16S104J
R	916		RS1/16S104J
R	923		RS1/16S103J
R	924		RD1/4PU122J
R	925		RS1/16S182J
R	931		RS1/16S472J
R	932		RS1/16S473J
R	933		RS1/16S103J
R	934		RS1/16S473J
R	935		RS1/16S104J
R	936		RS1/16S103J
R	938		RD1/4PU102J
R	939		RD1/4PU102J
R	951		RD1/4PU153J
R	952		RS1/16S472J
R	953		RS1/16S472J
R	954		RS1/16S102J
R	983		RS1/16S223J
R	984		RS1/16S473J
R	985		RS1/16S102J

CAPACITORS

C	101	CKSRYB104K16
C	102	CKSRYB473K25
C	131	CKSRYB104K16
C	132	CKSRYB104K16
C	141	CKSRYB104K16
C	142	CKSRYB103K50
C	143	CKSRYB474K10
C	144	CKSRYB474K10
C	145	CCSRCH101J50
C	146	CCSRCH101J50
C	147	CKSRYB104K16
C	201	CEJQ1R0M50
C	202	CEJQ1R0M50
C	203	CKSRYB104K16
C	204	CKSRYB104K16
C	205	CKSRYB104K16
C	206	CEJQ470M16
C	207	CEJQ1R0M50
C	208	CEJQ1R0M50
C	209	CEJQ1R0M50

		=====Circuit Symbol and No.	===Part Name	Part No.
C	210			CEJQ1R0M50
C	211			CEJQ4R7M35
C	212			CEJQ4R7M35
C	213			CEJQ4R7M35
C	214			CEJQ4R7M35
C	215			CEJQ4R7M35
C	216			CEJQ4R7M35
C	217			CEJQ4R7M35
C	218			CEJQ4R7M35
C	219			CCSRCH120J50
C	220			CCSRCH120J50
C	221			CCSRCH120J50
C	222			CCSRCH120J50
C	225			CEJQ100M16
C	301			CKSRYB104K16
C	306			CEJQ330M10
C	307	3300µF/16V		CCH1486
C	309			CKSRYB104K16
C	310			CEJQ100M16
C	311			CKSYB475K16
C	312			CKSYB475K16
C	317			CKSRYB474K10
C	318			CKSRYB474K10
C	319			CKSRYB474K10
C	320			CKSRYB474K10
C	321			CKSRYB474K10
C	322			CKSRYB474K10
C	323			CKSRYB474K10
C	324			CKSRYB474K10
C	325			CKSQYB225K10
C	326			CKSQYB225K10
C	351	(DEH-P350)		CEJQ4R7M35
C	352	(DEH-P350)		CEJQ4R7M35
C	353			CEJQ4R7M35
C	354			CEJQ4R7M35
C	355			CEJQ4R7M35
C	356			CEJQ4R7M35
C	401			CKSRYB103K50
C	402			CEJQ101M10
C	403			CKSQYB105K16
C	404			CKSYB475K10
C	406			CEJQ470M10
C	408			CKSYB475K10
C	409			CEJQ1R0M50
C	411			CCSRCH101J50
C	412			CCSRCH470J50
C	601			CEJQ4R7M35
C	602			CKSQYB105K16
C	603			CEJQ2R2M50
C	604			CCSRCH200J50
C	605			CCSRCH200J50
C	609			CCSRCH101J50
C	651			CEJQ101M10
C	652			CKSRYB473K25
C	653			CKSRYB473K25
C	656			CKSRYB473K25
C	657			CCSRCH470J50
C	755			CKSRYB104K16
C	806			CKSRYB473K25
C	807			CKSRYB473K25
C	811			CKSQYB105K16
C	854			CKSRYB473K25
C	911	470µF/16V		CCH1331
C	912			CKSRYB472K50
C	913			CKSRYB103K50
C	914			CEJQ470M10
C	921			CEJQ221M10
C	922			CKSRYB103K50
C	923			CEJQ101M16
C	931			CEJQ1R0M50

C Unit Number : CWM8607
Unit Name : Keyboard Unit

MISCELLANEOUS

IC	1900	IC	PD6294A
IC	1901	HIC Module	RS-140
Q	1910	Transistor	DTC114EU
D	1902	Diode Network	DA204U
D	1910	LED	NSSW440-9159
D	1912	LED	NSSW440-9159
D	1914	LED	NSSW440-9159
D	1930	LED	CL-195PG-CD
D	1931	LED	CL-195PG-CD
D	1932	LED	CL-195PG-CD
D	1935	LED	CL-195PG-CD
D	1942	LED	CL-195PG-CD
D	1943	LED	CL-195PG-CD
D	1946	LED	CL-195PG-CD
D	1947	LED	CL-195PG-CD
X	1900	Ceramic Resonator 5.00MHz	CSS1547
S	1901	Push Switch	CSG1112
S	1902	Push Switch	CSG1112
S	1903	Switch	CSG1107
S	1904	Switch	CSG1107
S	1905	Switch	CSG1107
S	1906	Switch	CSG1107
S	1907	Switch	CSG1107
S	1908	Switch	CSG1107
S	1909	Switch	CSG1107
S	1910	Switch	CSG1107
S	1911	Push Switch	CSG1112
S	1912	Push Switch(DEH-P350)	CSG1112
S	1912	Push Switch(DEH-P3500, P4550)	CSG1160
S	1913	Push Switch	CSG1112
S	1914	Push Switch(DEH-P350)	CSG1112
S	1914	Push Switch(DEH-P3500, P4550)	CSG1160
S	1915	Push Switch	CSG1112
S	1916	Push Switch	CSG1112
S	1917	Push Switch	CSG1111
S	1918	Push Switch	CSG1111
S	1950	Encoder	CSD1059

RESISTORS

R	1900	RS1/16S222J
R	1901	RS1/16S222J
R	1902	RS1/16S121J
R	1903	RS1/16S2R2J
R	1910	RS1/16S101J
R	1912	RS1/16S680J
R	1914	RS1/16S181J
R	1915	RS1/16S181J
R	1919	RS1/16S101J
R	1930	RS1/16S560J
R	1932	RS1/16S560J
R	1934	RS1/16S560J
R	1936	RS1/16S560J
R	1938	RS1/16S151J
R	1939	RS1/16S151J
R	1940	RS1/16S560J
R	1941	RS1/16S151J
R	1942	RS1/16S0R0J
R	1943	RS1/16S151J
R	1950	RS1/16S472J
R	1960	RS1/16S473J

=====Circuit Symbol and No.		===Part Name	Part No.
CAPACITORS			
C	1900		CKSRYB104K16
C	1901		CKSYF106Z10
C	1902		CKSRYB104K16
C	1903		CKSRYB104K16
C	1904		CKSRYB104K16
C	1910		CKSRYF104Z25
C	1911		CKSRYF104Z25
C	1913		CKSRYF104Z25

B Unit Number : CWM8758
Unit Name : Panel Unit

MISCELLANEOUS			
D	1970	LED	CL220PGC
S	1970	Push Switch(EJECT)	CSG1112
RESISTORS			
R	1970		RS1/16S101J
R	1971		RS1/16S101J
R	1972		RS1/16S0R0J
CAPACITORS			
C	1970		CKSRYB104K16

D Unit Number : CWX2708
Unit Name : CD Core Unit(S10)

MISCELLANEOUS			
IC	201	IC	UPD63712GC
IC	301	IC	BA5996FP
IC	701	IC	NJM2391DL1-33
Q	101	Transistor	2SB1132
D	101	Diode	1SS355
D	701	Diode	1SR154-400
X	201	Ceramic Resonator 16.934MHz	CSS1603
S	901	Spring Switch(HOME)	CSN1051
S	902	Spring Switch(CLAMP)	CSN1051
S	903	Spring Switch(DSCSNS)	CSN1052
S	904	Spring Switch(12EJ)	CSN1051
S	905	Spring Switch(8EJ)	CSN1051
RESISTORS			
R	101		RS1/10S1R5J
R	102		RS1/10S1R5J
R	103		RS1/10S1R5J
R	104		RS1/10S1R5J
R	105		RS1/10S1R5J
R	201		RS1/16S102J
R	202		RS1/16S1002D
R	203		RS1/16S1002D
R	204		RS1/16S1002D
R	205		RS1/16S1002D
R	206		RS1/16S1002D
R	207		RS1/16S1002D
R	208		RS1/16S1002D
R	209		RS1/16S1002D
R	214		RS1/16S103J
R	215		RS1/16S393J
R	216		RS1/16S122J
R	217		RS1/16S562J
R	218		RS1/16S472J
R	234		RS1/16S0R0J
R	235		RS1/16S103J
R	236		RS1/16S103J
R	301		RS1/16S183J
R	302		RS1/16S822J
R	303		RS1/16S183J

=====Circuit Symbol and No.		===Part Name	Part No.
R	304		RS1/16S822J
R	305		RS1/16S183J
R	306		RS1/16S183J
R	307		RS1/16S183J
R	308		RS1/16S183J
R	501		RS1/16S102J
R	503		RS1/16S102J
R	505		RS1/16S102J
R	506		RS1/16S221J
R	507		RS1/16S221J
R	508		RS1/16S221J
R	509		RS1/16S221J
R	601		RS1/16S101J
R	602		RS1/16S101J
R	603		RS1/16S0R0J
R	901		RS1/16S104J
R	902		RS1/16S473J
R	903		RS1/16S273J
CAPACITORS			
C	101		CKSRYB104K16
C	102		CKSRYB104K16
C	103	100µF/16V	CCH1504
C	104	47µF/6.3V	CCH1506
C	106		CCSRCH101J50
C	108		CKSRYB224K16
C	109		CKSRYB224K16
C	201		CKSRYB104K16
C	202		CKSRYB471K50
C	203		CKSRYB104K16
C	205	22µF/6.3V	CCH1507
C	206		CKSRYB103K25
C	207		CKSRYB104K16
C	208	100µF/6.3V	CCH1505
C	209		CKSRYB104K16
C	210		CKSRYB104K16
C	211		CKSRYB104K16
C	212		CKSRYB104K16
C	213		CKSRYB332K50
C	214		CKSRYB473K25
C	215		CKSRYB104K16
C	216		CKSRYB103K25
C	217		CCSRCH560J50
C	218		CCSRCH5R0C50
C	219		CKSRYB104K16
C	220		CKSRYB104K16
C	221		CKSRYB104K16
C	222		CKSRYB103K25
C	223		CCSRCH680J50
C	224		CCSRCH470J50
C	225		CKSRYB682K50
C	231		CKSRYB102K50
C	232		CKSRYB102K50
C	301	100µF/16V	CCH1504
C	302		CCSRCH221J50
C	303		CCSRCH221J50
C	304		CKSRYB472K50
C	305		CKSRYB103K25
C	306		CKSRYB104K16
C	501		CKSRYB103K25
C	502		CKSRYB103K25
C	702	100µF/16V	CCH1504
C	703		CKSRYB224K16
C	704		CKSRYB104K16
C	705	10µF/6.3V	CCH1470

Miscellaneous Parts List

		Pickup Unit(Service)(P10)	CXX1641
M	1	Motor Unit(SPINDLE)	CXB6007
M	2	Motor Unit(LOADING/CARRIAGE)	CXB8933

6. ADJUSTMENT

6.1 CD ADJUSTMENT

1) Cautions on adjustments

• In this product the single voltage (3.3V) is used for the regulator. The reference voltage is the REFO1 (1.65V) instead of the GND.
If you should mistakenly short the REFO1 with the GND during adjustment, accurate voltage will not be obtained, and the servo's misoperation will apply excessive shock to the pickup. To avoid such problems:
a. Do not mix up the REFO1 with the GND when connecting the (-) probe of measuring instruments. Especially on an oscilloscope, avoid connecting the (-) probe for CH1 to the GND.
b. In many cases, measuring instruments have the same potential as that for the (-) probe. Be sure to set the measuring instruments to the floating state.
c. If you have mistakenly connected the REFO1 to the GND, turn off the regulator or the power immediately.

• Before mounting and removing filters or leads for adjustment, be sure to turn off the regulator.

• For stable circuit operation, keep the mechanism operating for about one minute or more after the regulator is turned on.

• In the test mode, any software protections will not work. Avoid applying any mechanical or electrical shock to the mechanism during adjustment.

• The RFI and RFO signals with a wide frequency range are easy to oscillate. When observing the signals, insert a resistor of 1k ohms in series.

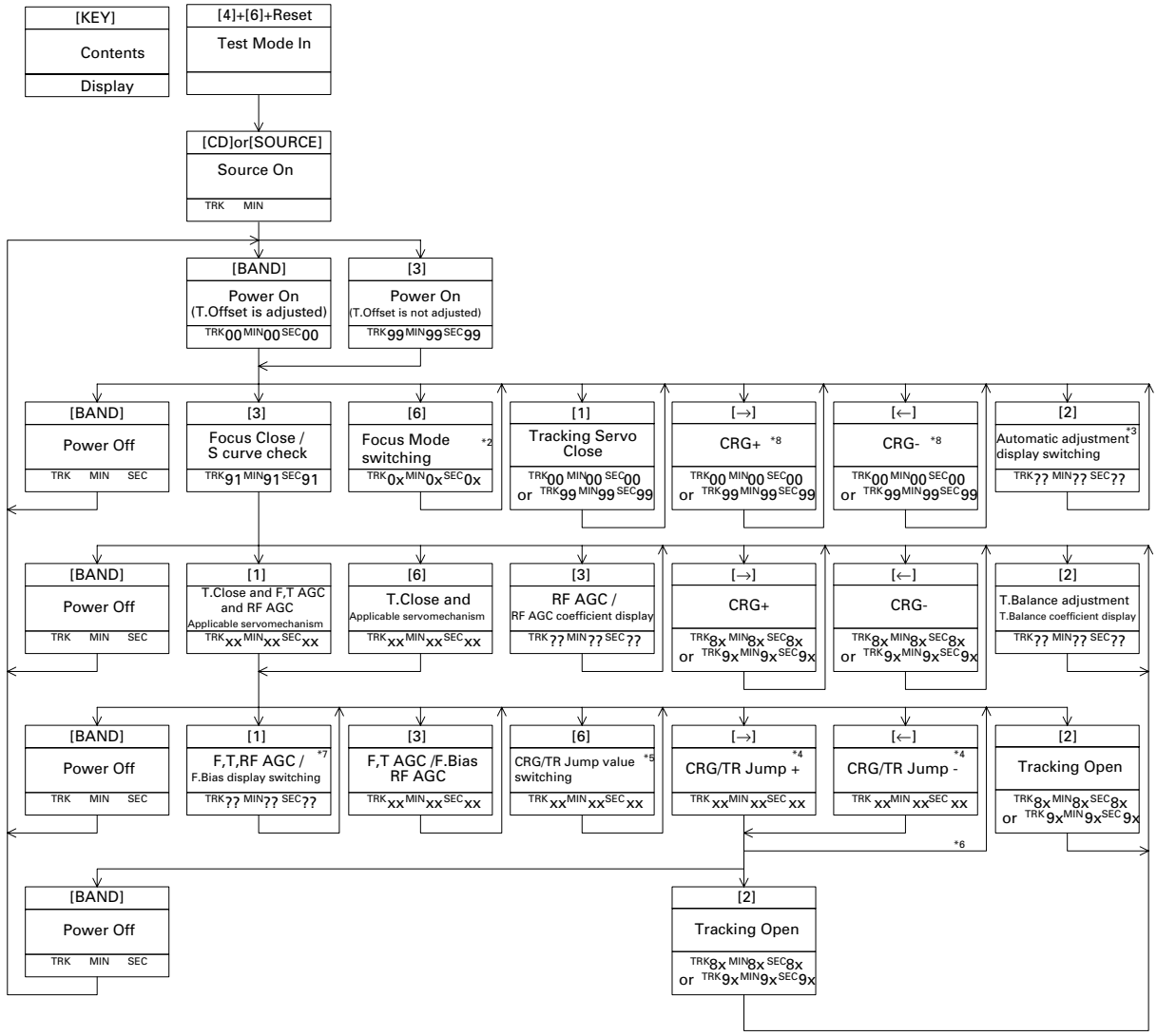
• The load and eject operation is not guarantied with the mechanism upside down. If the mechanism is blocked due to mistaken eject operation, reset the product or turn off and on the ACC to restore it.

2) Test mode

This mode is used to adjust the CD mechanism module.
• To enter the test mode.
While pressing the 4 and 6 keys at the same time, reset.
• To exit from the test mode.
Turn off the ACC and back up.

Notes:
a. During ejection, do not press any other keys than the EJECT key until the loaded disc is ejected.
b. If you have pressed the (→) key or (←) key during focus search, turn off the power immediately to protect the actuator from damage caused by the lens stuck.
c. For the TR jump modes except 100TR, the track jump operation will continue even if the key is released.
d. For the CRG move and 100TR jump modes, the tracking loop will be closed at the same time when the key is released.
e. When the power is turned off and on, the jump mode is reset to the single TR (91), the RF amp gain is set to 0dB, and the auto-adjustment values are reset to the default settings.

● Flow Chart



*1) TYP (TRK MIN SEC) → -12dB (TRK 12 MIN 12 SEC 12)

*2) Focus Close (TRK 00 MIN 00 SEC 00 / TRK 99 MIN 99 SEC 99) → S.Curve (TRK 01 MIN 01 SEC 01) → F EQ measurement setting (TRK 02 MIN 02 SEC 02)

*3) F.Offset Display → RF.Offset Display → T.Offset Display

*4) 1TR/32TR/100TR

*5) Single TR → 32TR → 100TR → CRG Move
9x(8x) : 91(81) 92(82) 93(83) 94(84)

*6) Only at the time of CRG Move or 100TR Jump

*7) TRK/MIN/SEC → F.AGC → T.AGC Gain → F.bias → RF AGC

*8) CRG motor voltage = 2[V]

[Key]	Operation
	Test Mode
[BAND]	Power On / Off
[→]	CRG + / TR Jump + (Direction of the external surface)
[←]	CRG - / TR Jump - (Direction of the internal surface)
[1]	CLS and AGC and Applicable servomechanism / AGC, AGC display switching
[2]	RF Gain switching / Offset adjustment display / T.Balance adjustment / T.Open
[3]	Close, S.Curve / Rough Servo and RF AGC / F, T, RF AGC
-	SPDL 1X / 2X switching (Double-speed compatibility only)
-	Gop measurement
[6]	Forcus Mode switching / Tracking Close / CRG, TR Jump switching

6.2 CHECKING THE GRATING AFTER CHANGING THE PICKUP UNIT

• **Note :**
The grating angle of the PU unit cannot be adjusted after the PU unit is changed. The PU unit in the CD mechanism module is adjusted on the production line to match the CD mechanism module and is thus the best adjusted PU unit for the CD mechanism module. Changing the PU unit is thus best considered as a last resort. However, if the PU unit must be changed, the grating should be checked using the procedure below.

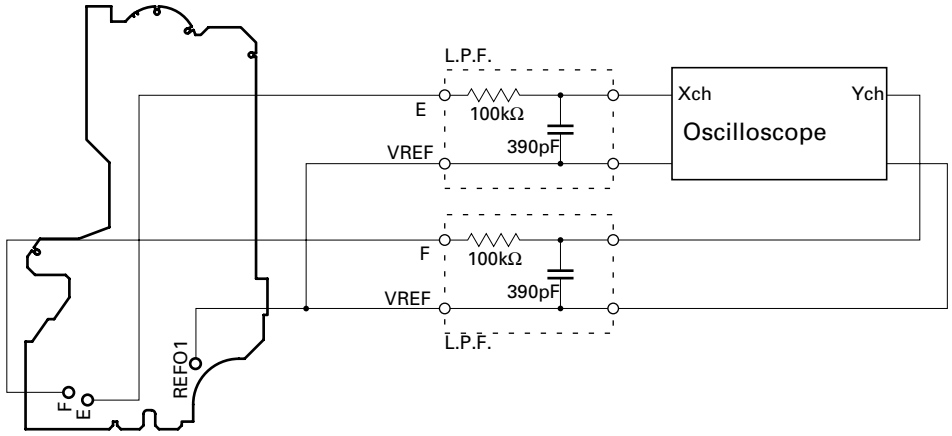
• **Purpose :**
To check that the grating is within an acceptable range when the PU unit is changed.

• **Symptoms of Mal-adjustment :**
If the grating is off by a large amount symptoms such as being unable to close tracking, being unable to perform track search operations, or taking a long time for track searching.

• **Method :**

• Measuring Equipment	• Oscilloscope, Two L.P.F.
• Measuring Points	• E, F, REFO1
• Disc	• ABEX TCD-782
• Mode	• TEST MODE

CD CORE UNIT(S10)



• **Checking Procedure**
1. In test mode, load the disc and switch the 3V regulator on.
2. Using the → and ← buttons, move the PU unit to the innermost track.
3. Press key 3 to close focus, the display should read "91". Press key 2 to implement the tracking balance adjustment the display should now read "81". Press key 3. The display will change, returning to "81" on the fourth press.
4. As shown in the diagram above, monitor the LPF outputs using the oscilloscope and check that the phase difference is within 75° . Refer to the photographs supplied to determine the phase angle.
5. If the phase difference is determined to be greater than 75° try changing the PU unit to see if there is any improvement. If, after trying this a number of times, the grating angle does not become less than 75° then the mechanism should be judged to be at fault.

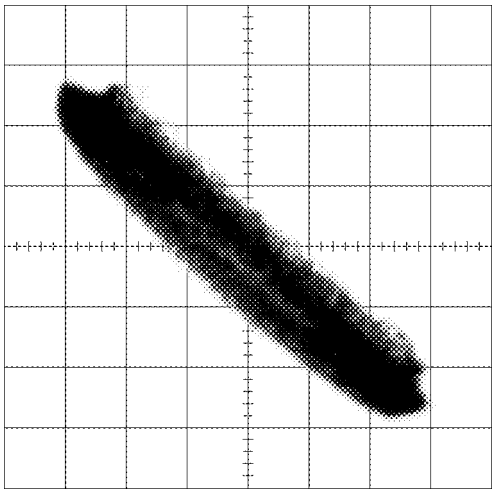
• **Note**
Because of eccentricity in the disc and a slight misalignment of the clamping center the grating waveform may be seen to "wobble" (the phase difference changes as the disc rotates). The angle specified above indicates the average angle.

• **Hint**
Reloading the disc changes the clamp position and may decrease the "wobble".

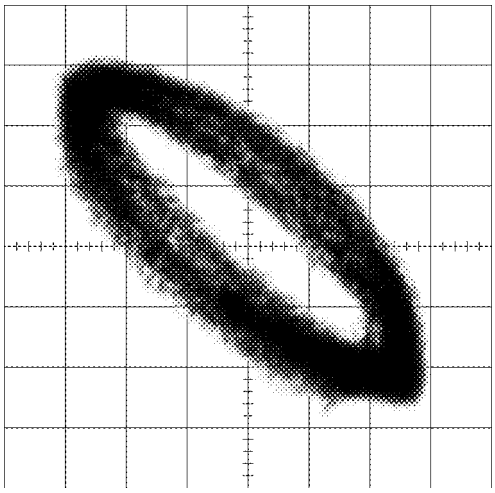
Grating waveform

Ech → Xch 20mV/div, AC
Fch → Ych 20mV/div, AC

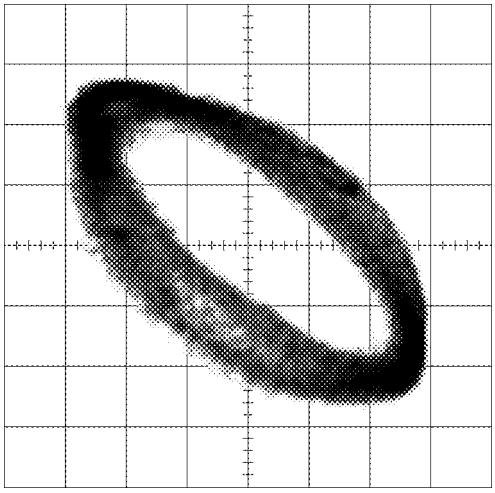
0°



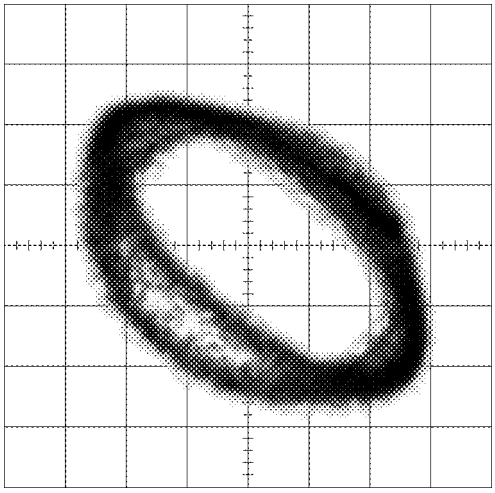
30°



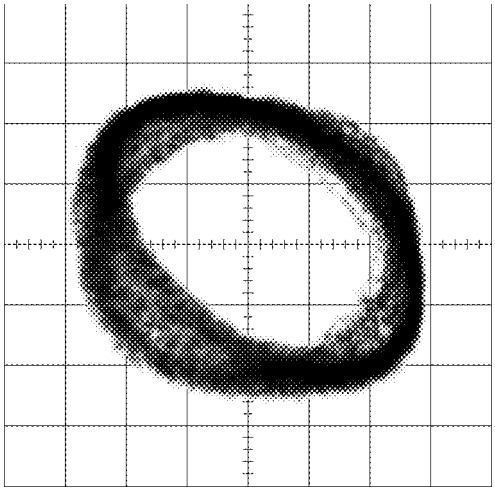
45°



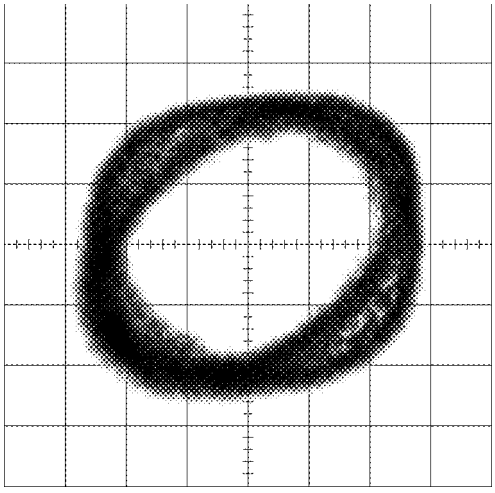
60°



75°



90°



6.3 ERROR MODE

● Error Messages

If a CD is not operative or stopped during operation due to an error, the error mode is turned on and cause(s) of the error is indicated with a corresponding number. This arrangement is intended at reducing nonsense calls from the users and also for facilitating trouble analysis and repair work in servicing.

(1) Basic Indication Method

1) When SERRORM is selected for the CSMOD (CD mode area for the system), error codes are written to DMIN (minutes display area) and DSEC (seconds display area). The same data is written to DMIN and DSEC. DTNO remains in blank as before.

2) Head unit display examples

Depending on display capability of LCD used, display will vary as shown below. xx contains the error number.

8-digit display	6-digit display	4-digit display
ERROR–xx	ERR–xx	E–xx

(2) Error Code List

Code	Class	Displayed error code	Description of the code and potential cause(s)
10	Electricity	Carriage Home NG SERVO LSI Communication Error	CRG can't be moved to inner diameter. CRG can't be moved from inner diameter. → Failure on home switch or CRG move mechanism. Communication error between microcomputer and SERVO LSI.
11	Electricity	Focus Servo NG	Focusing not available. → Stains on rear side of disc or excessive vibrations on REWRITABLE.
12	Electricity	Spindle Lock NG Subcode NG	Spindle not locked. Sub-code is strange (not readable). → Failure on spindle, stains or damages on disc, or excessive vibrations. A disc not containing CD-R data is found. Turned over disc are found, though rarely. CD signal error.
17	Electricity	Setup NG	AGC protection doesn't work. Focus can be easily lost. → Damages or stains on disc, or excessive vibrations on REWRITABLE.
30	Electricity	Search Time Out	Failed to reach target address. → CRG tracking error or damages on disc.
44	Electricity	ALL Skip	Skip setting for all track. (CD-R/RW)
50	Mechanism	CD On Mech Error	Mechanical error during CD ON. → Defective loading motor, mechanical lock and mechanical sensor.
A0	System	Power Supply NG	Power (VD) is ground faulted. → Failure on SW transistor or power supply (failure on connector).

Remarks: Mechanical errors are not displayed (because a CD is turned off in these errors).

Unreadable TOC does not constitute an error. An intended operation continues in this case.

Upper digits of an error code are subdivided as shown below:

1x: Setup relevant errors, 3x: Search relevant errors, Ax: Other errors.

7. GENERAL INFORMATION

7.1 DIAGNOSIS

7.1.1 DISASSEMBLY

● Removing the Case (not shown)

1. Remove the Case.

● Removing the CD Mechanism Module (Fig.1)

1 Remove the four screws.

Disconnect the connector and then remove the CD Mechanism Module.

● Removing the Grille Assy (Fig.1)

2 Remove the two screws and then remove the Grille Assy.

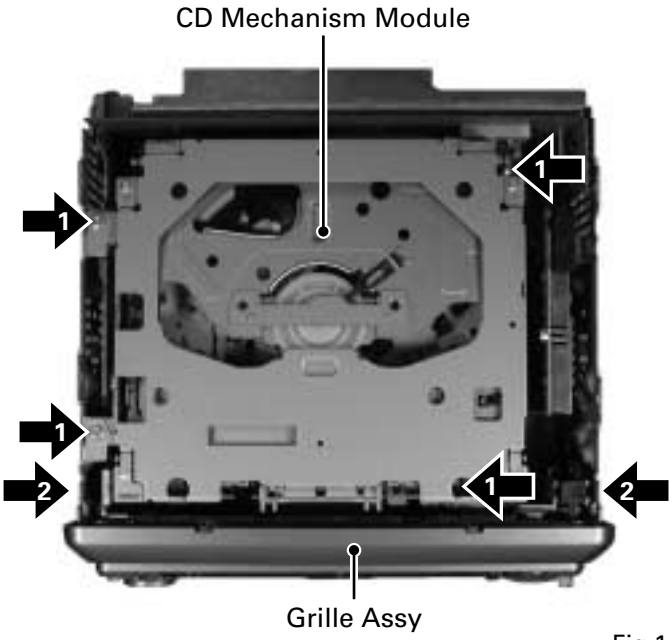


Fig.1

● Removing the Tuner Amp Unit (Fig.2)

1 Remove the screw.

2 Remove the three screws.

3 Straight the tabs at three locations indicated.

4 Remove the screw and then remove the Tuner Amp Unit.

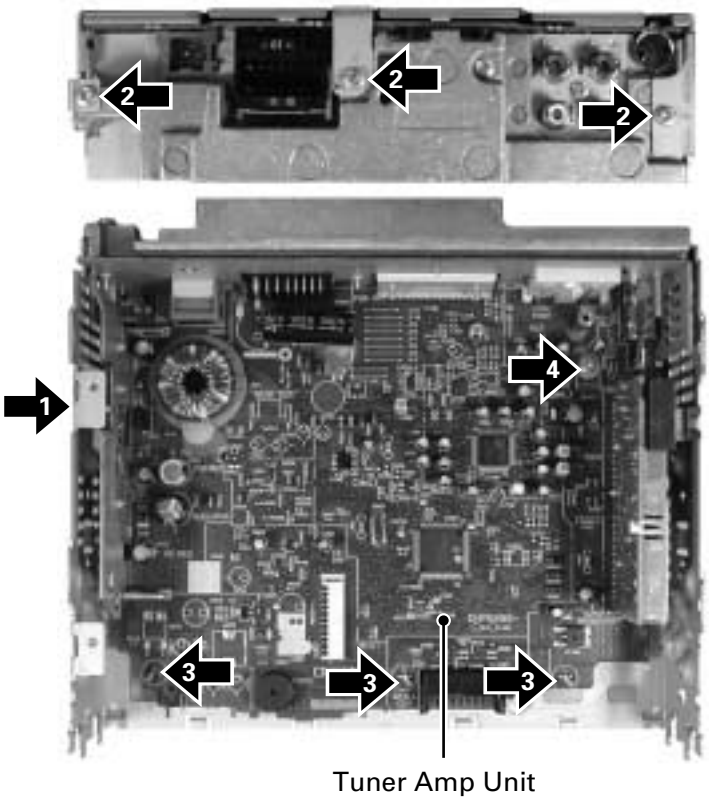
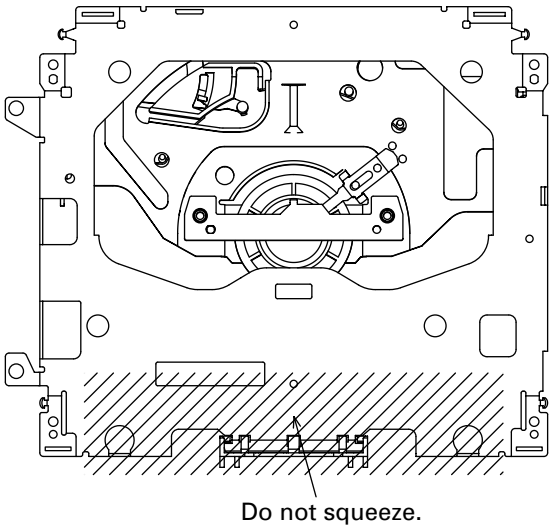


Fig.2

● How to hold the Mechanical Unit

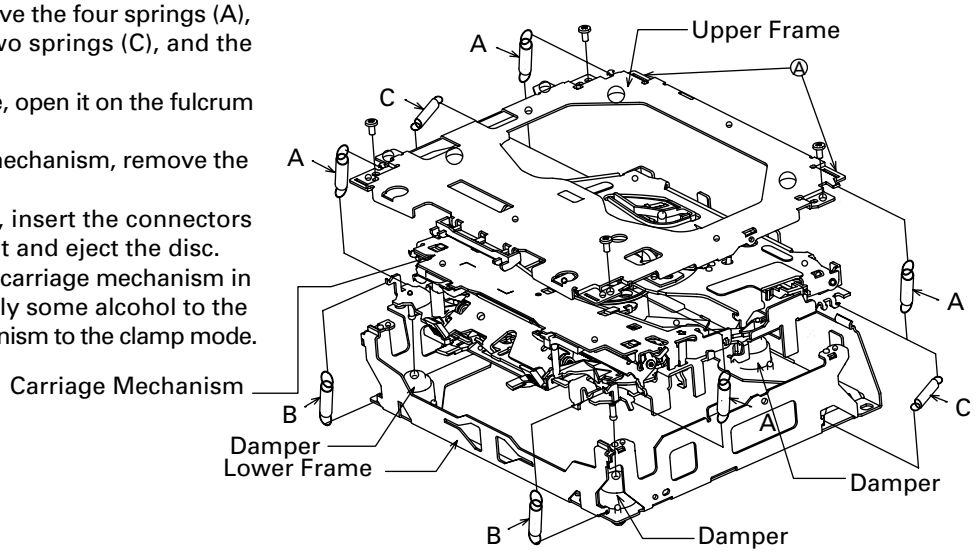
1. Hold the top and bottom frame.
2. Do not squeeze top frame's front portion too tight, because it is fragile.



● Removing the Upper and Lower Frames

1. With a disc clamped, remove the four springs (A), the two springs (B), the two springs (C), and the four screws.
2. To remove the upper frame, open it on the fulcrum A.
3. While lifting the carriage mechanism, remove the three dampers.
4. With the frames removed, insert the connectors coming from the main unit and eject the disc.

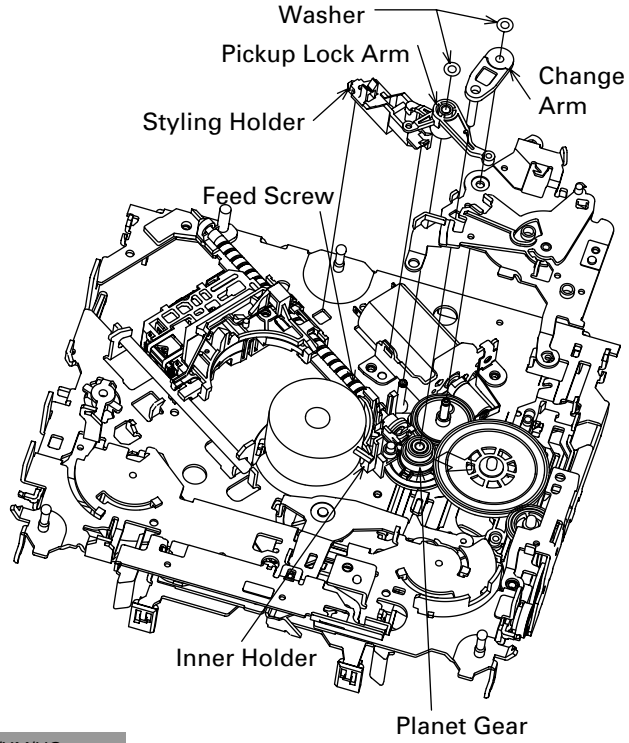
Caution: Before installing the carriage mechanism in the frames, be sure to apply some alcohol to the dampers and set the mechanism to the clamp mode.



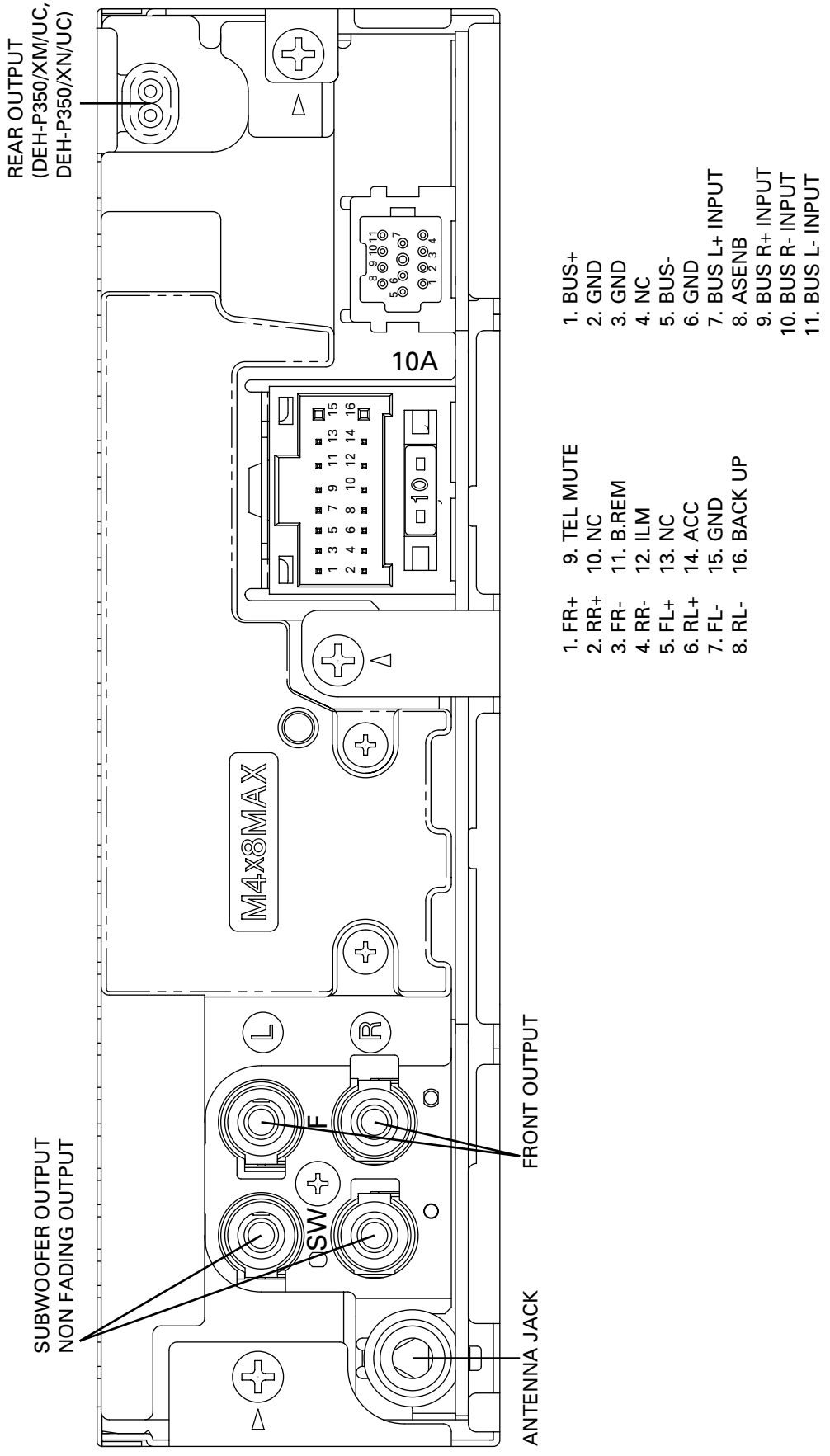
● Removing the Pickup Unit

1. Set the mechanism to the clamp mode.
2. Remove the lead wires from the inner holder.
3. Remove the two washers, styling holder, change arm, and pickup lock arm.
4. While releasing from the hook of the inner holder, lift the end of the feed screw.

Caution: In assembling, move the planet gear to the load/eject position before setting the feed screw in the inner holder.



7.1.2 CONNECTOR FUNCTION DESCRIPTION



7.2 PARTS

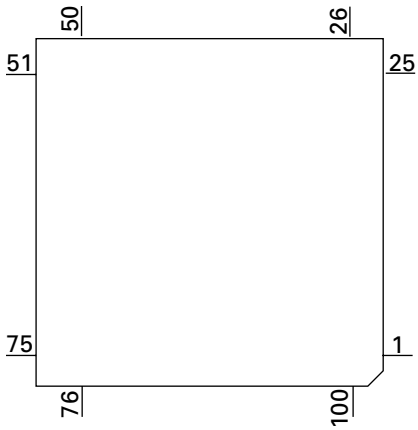
7.2.1 IC

● **Pin Functions(PD5802A)**

Pin No.	Pin Name	I/O	Function and Operation
1	SYSPW	O	System power control output
2	DORAON	O	Tuner unit power supply output
3	XSO	O	S10 : Serial data output
4	XSI	I	S10 : Serial data input
5	XSCK	O	S10 : Clock output for serial communication
6	BYTE	I	External data bus width change input
7	CNVSS	I	Processor mode change input
8	TELIN	I	TEL : Cellular mute input
9	NC		Not used
10	RESET	I	Reset input
11	XOUT	O	Clock output
12	VSS	I	GND
13	XIN	I	Clock input
14	VCC	I	Power supply input
15-17	NC		Not used
18	INTQ		CD-TEXT PACK interruption
19	RX2	I	IPBUS : Input 2
20	LCDPW	O	Back light power supply output
21	CLCONT	O	S10 : Driver control change output
22	PEE	O	PEE sound output
23	CDLOEJ	O	S10 : Road/eject output
24-26	NC		Not used
27	RX	I	IPBUS : Input
28	TX	O	IPBUS : Output
29-31	NC		Not used
32	VDCONT	O	S10 : VD power supply control output
33	DPDT	O	GRILL : Data output
34	KYDT	I	GRILL : Data input
35, 36	ROT1, 0	I	Rotary encoder pulse input1, 0
37	PCL	O	Output for clock adjustment
38	SWVDD	O	GRILL : Chip enable output
39	$\overline{\text{DSENS}}$	I	Detach sense input
40	FLPILM	O	Illumination output inside flap
41	ILMPW	O	Illumination output
42	EJTIN	I	Eject key input
43-55	NC		Not used
56	CONT	O	S10 : Servo driver control output
57	EMUTE	O	EVOL : Mute output
58	$\overline{\text{XSTB}}$	O	S10 : Data strobe signal output
59	XA0	O	S10 : Command/parameter discernment signal output
60	VCC	I	Power supply input
61	$\overline{\text{XRST}}$	O	S10 : Reset signal output
62	VSS	I	GND
63-65	NC		Not used
66	$\overline{\text{XTALEN}}$	O	S10 : Ceramic resonator oscillation control
67	DALMON	O	For consumption current reduction
68	NC		Not used
69	$\overline{\text{TUNPCE2}}$	O	TUNER : Chip enable output(EEPROM)
70	TUNPCE	O	TUNER : Chip enable output(PLL)
71	$\overline{\text{ROMCS}}$	O	ROM correction : Chip select
72	$\overline{\text{ASENS}}$	I	ACC sense
73	$\overline{\text{BSENS}}$	I	Back up sense
74	ROMCK	O	ROM correction : Clock output
75	ROMDATA	I/O	ROM correction : Data input/output
76	VST	O	EVOL : Strobe output
77	VDT	O	EVOL : Data output
78	VCK	O	EVOL : Clock output
79	IPPW	O	IPBUS : Driver power supply control output
80	ASENBO	O	IPBUS : Slave ACC sense output
81	$\overline{\text{ISENS}}$	I	Illumination sense input

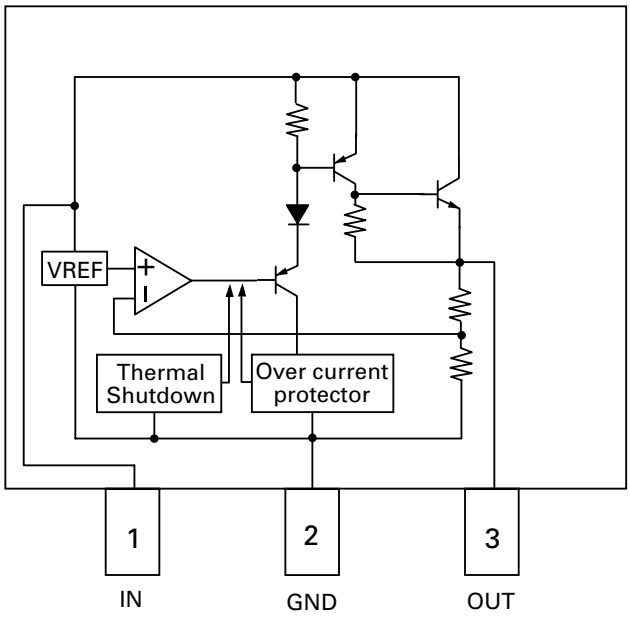
Pin No.	Pin Name	I/O	Format Function and Operation
82-84	NC		Not used
85	MUTE	O	MUTE output
86	TESTIN	I	Test program input
87	DSCSNS	I	S10 : Disc position detection input
88	VDSENS	I	S10 : VD power supply short input
89	TEMP	I	S10 : Temperature sense input
90	LVLINR	I	Level indicator R.ch input
91	$\overline{\text{CSENS}}$	I	Flap opening-and-closing sense input
92	LVLINL	I	Level indicator L.ch input
93	MODEL0		Model 0
94	AVSS	I	GND
95	SL	I	TUNER : Signal level input
96	VREF		AD translation reference voltage
97	AVCC	I	AD translation power supply input terminal
98	TUNPDI	I	TUNER : PLL communication
99	TUNPDO	O	TUNER : Data output(PLL)
100	TUNPCK	O	TUNER : Clock output(PLL)

* PD5802A

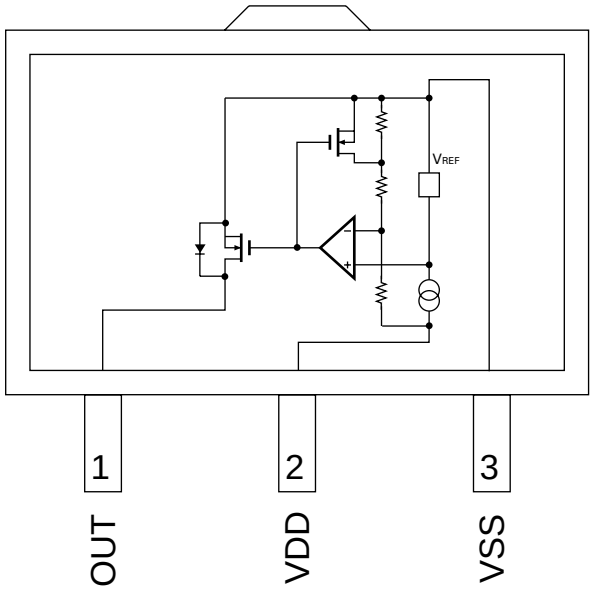


IC's marked by * are MOS type.
Be careful in handling them because they are very liable to be damaged by electrostatic induction.

NJM2391DL1-33



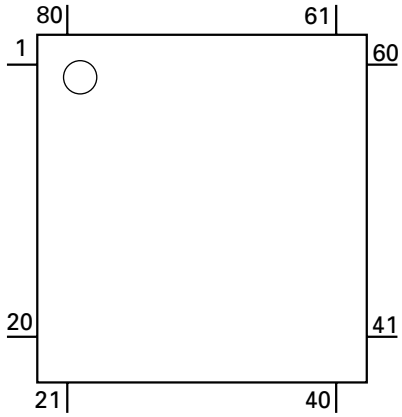
* S-80835ANUP-EDZ



● Pin Functions (PD6294A)

Pin No.	Pin Name	I/O	Function and Operation
1	VSS		GND
2	X1		Crystal oscillator connection pin
3	X0		Crystal oscillator connection pin
4	NC		Not used
5,6	MOD1,0	I	Connect to GND
7	DIMMER	O	Dimmer select output
8	KYDT	O	Key data output
9	DPDT	I	Display data input
10	REMIN	I	Remote control pulse input
11	GRN		Dual Illumination (Green)
12	AMB		Dual Illumination (Amber)
13–16	KD4–1	I	Key data input
17-22	KST6–1	O	Key strobe output
23	VDD		VDD
24-73	SEG49–0	O	LCD segment output
74–77	COM3–0	O	LCD common output
78	VLCD	I	LCD voltage input
79,80	V2,1		Power supply terminal

*PD6294A

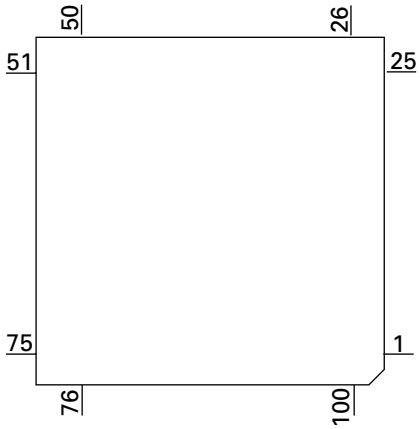


● Pin Functions(UPD63712GC)

Pin No.	Pin Name	I/O	Function and Operation
1	LD	O	Output of LD
2	PD	I	Input of PD
3	PN	I	Assignment of pickup polarity
4	AVDD		Power supply for the analog system
5	DGND		Ground for digital circuits
6	RFOK	O	Output of RFOK
7	INTQ	O	Interruption signals to the external microcomputer
8	$\overline{RST}$	I	Input of reset
9	A0	I	Command/Parameter discrimination signal input
10	$\overline{STB}$	I	Data strobe signal input
11	$\overline{SCK}$	I	Serial data clock input
12	SO	O	Serial data output
13	SI	I	Serial data input
14	DVDD		Power supply for digital circuits
15	DAVDD		Power supply for DAC
16	ROUT	O	Output of audio for the right channel
17	DAGND		GND for DAC
18	REGC		Connected to the capacitor for band gap
19	DAGND		GND for DAC
20	LOUT	O	Output of audio for the left channel
21	DAVDD		Power supply for DAC
22	XVDD		Power supply for the crystal oscillator
23	$\overline{XTAL}$	O	Connected to the crystal oscillator
24	XTAL	I	Connected to the crystal oscillator
25	XGND		Ground for the crystal oscillator
26	DVDD		Power supply for digital circuits
27	C1D1	O	Information on error correction
28	C1D2	O	Information on error correction
29	C2D1	O	Information on error correction
30	C2D2	O	Information on error correction
31	C2D3	O	Information on error correction
32	LOCK	O	Output of LOCK
33	MIRR	O	MIRR signal
34	HOLD	O	HOLD signal
35	PLCK	O	Output of PLCK
36	C16M	O	Output of 16.9344MHz
37	DGND		Ground for digital circuits
38	TX	O	DAI output
39	EMPH	O	Pre-emphasis information output
40	FLAG	O	The flag for which output sound data cannot be corrected is outputted
41	DVDD		Power supply for digital circuits
42	LIMIT	I	Signal is inputted when the register can be read
43	$\overline{XTALEN}$	I	Permission to oscillate
44	DGND		Ground for digital circuits
45	DIN	I	Input of audio data
46	DOUT	O	Output of audio data
47	SCKIN	I	Clock input for audio data
48	SCKO	O	Clock output for audio data
49	LRCKIN	I	Input of LRCK for audio data
50	LRCK	O	Output LRCK for audio data
51	DVDD		Power supply for digital circuits
52	FD+	O	Output of focus drive PWM
53	FD-	O	Output of focus drive PWM
54	TD+	O	Output of tracking drive PWM
55	TD-	O	Output of tracking drive PWM
56	SD+	O	Output of thread drive PWM
57	SD-	O	Output of thread drive PWM
58	MD+	O	Output of spindle drive PWM
59	MD-	O	Output of spindle drive PWM
60	DGND		Ground for digital circuits

Pin No.	Pin Name	I/O	Function and Operation
61	TESTEN	I	Connected to GND
62-66	TEST4-0	I	Connected to GND
67	ADGND		GND for DAC
68	EFM	O	Output of EFM signals
69	ASY	I	Input of asymmetry
70	ADVDD		Power supply for DAC
71	RFI	I	Input of RF
72, 73	EQ2, 1		Equalizer 2, 1
74	RF-	I	Reversal input of RF
75	RF2-	I	Reversal input of RF2
76	AGCO	O	Output of RF
77	AGCI	I	Input of AGC
78	RFO	O	Output of RF
79	ATEST	O	Analog tests
80	C3T		Connection to the capacitor for detecting 3T
81	AGND		Ground for the analog system
82	A	I	Input of A
83	C	I	Input of C
84	B	I	Input of B
85	D	I	Input of D
86	F	I	Input of F
87	E	I	Input of E
88	VREFIN	I	Photo-detector input bias voltage
89	AVDD		Power supply for the analog system
90	REFOUT	O	Output of reference voltage
91	REFC		Connected to the capacitor for output of REFOUT
92	FE-	I	Reversal input of FE
93	FEO	O	Output of FE
94	ADCIN	I	TEST
95	TE-	I	Reversal input of TE
96	TEO	O	Output of TE
97	TE2	O	TE2
98	TEC	I	TEC
99	AGND		Ground for the analog system
100	PWMSW	I	Servo PWM mode switching

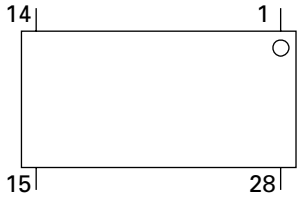
* UPD63712GC



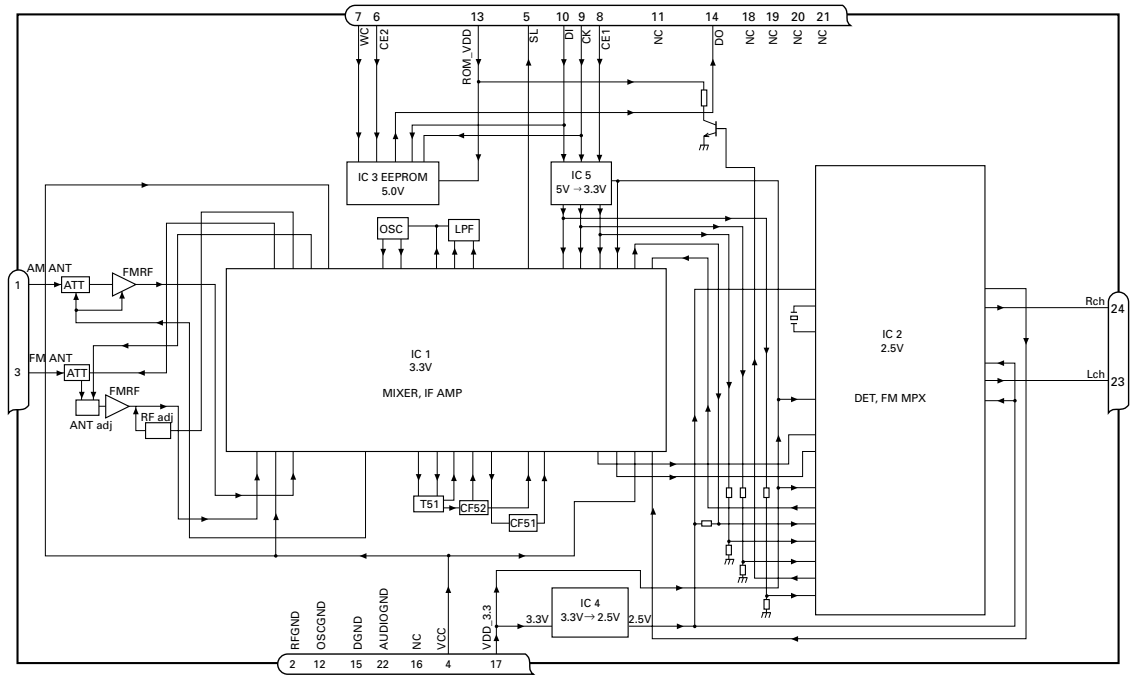
● Pin Functions(BA5996FP)

Pin No.	Pin Name	Function and Operation
1	VR	Input pin for reference voltage
2	OPIN2(+)	Input pin for non-inverting input for CH2 preamplifier
3	OPIN2(-)	Input pin for inverting input for CH2 preamplifier
4	OPOUT2	Output pin for CH2 preamplifier
5	OPIN1(+)	Input pin for non-inverting input for CH1 preamplifier
6	OPIN1(-)	Input pin for inverting input from CH1 preamplifier
7	OPOUT1	Output pin for CH1 preamplifier
8	GND	Ground pin
9	MUTE	Mute control pin
10	POWVCC1	Power supply pin for CH1, CH2, and CH3 at "Power" stage
11	VO1(-)	Driver CH1 - Negative output
12	VO1(+)	Driver CH2 - Positive output
13	VO2(-)	Driver CH2 - Negative output
14	VO2(+)	Driver CH2 - Positive output
15	VO3(+)	Driver CH2 - Positive output
16	VO3(-)	Driver CH2 - Negative output
17	VO4(+)	Driver CH4 - Positive output
18	VO4(-)	Driver CH4 - Negative output
19	POWVCC2	Power supply pin for CH4 at "Power" stage
20	GND	Ground pin
21	CNT	Control pin
22	LDIN	Loading input
23	OPOUTSL	Output pin for preamplifier for thread
24	OPINLSL	Input pin for preamplifier for thread
25	OPOUT3	CH3 preamplifier output pin
26	OPIN3(-)	Input pin for inverting input for CH3 preamplifier
27	OPIN3(+)	Input pin for non-inverting input for CH3 preamplifier
28	PREVCC	PreVcc

BA5996FP



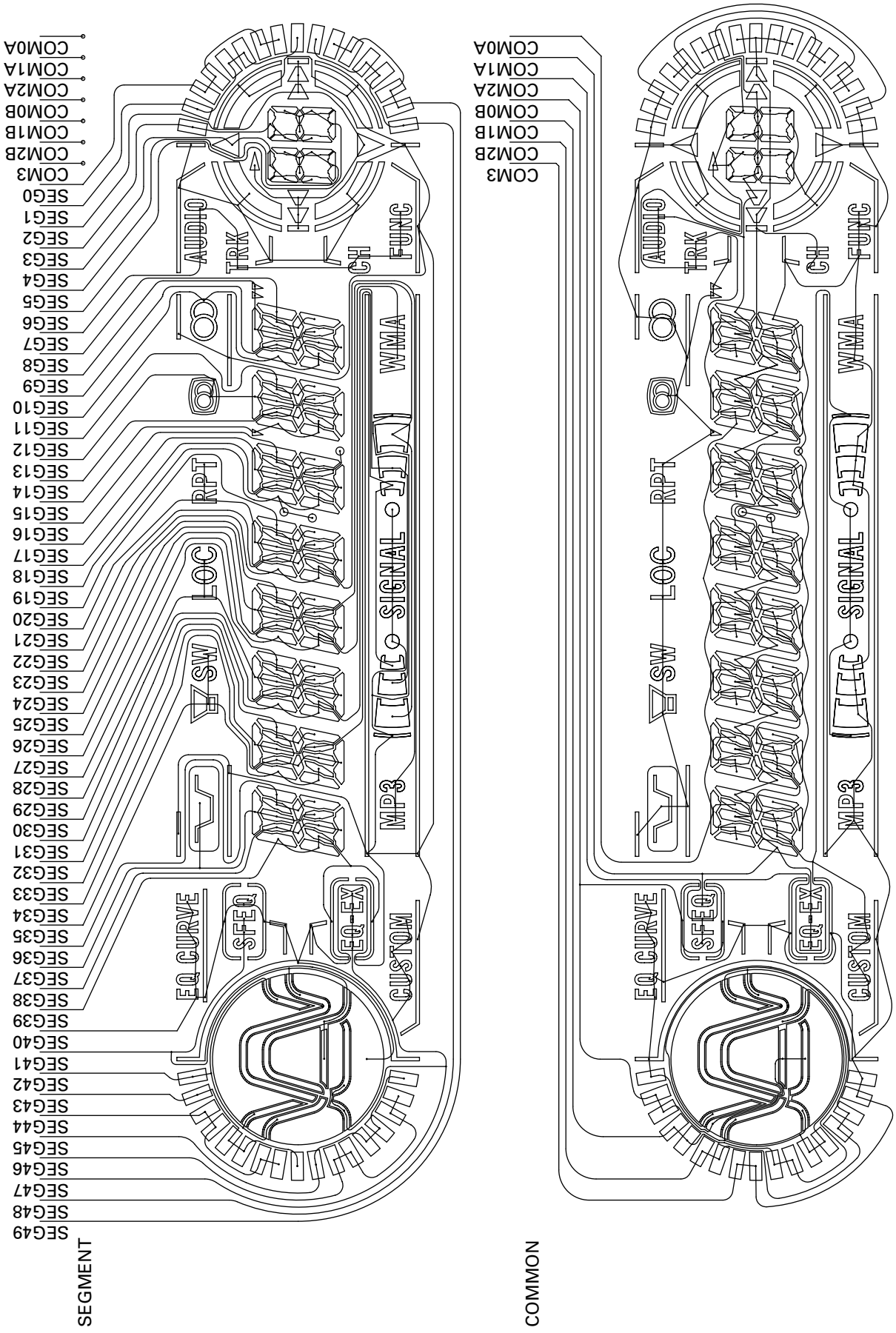
● FM/AM Tuner Unit



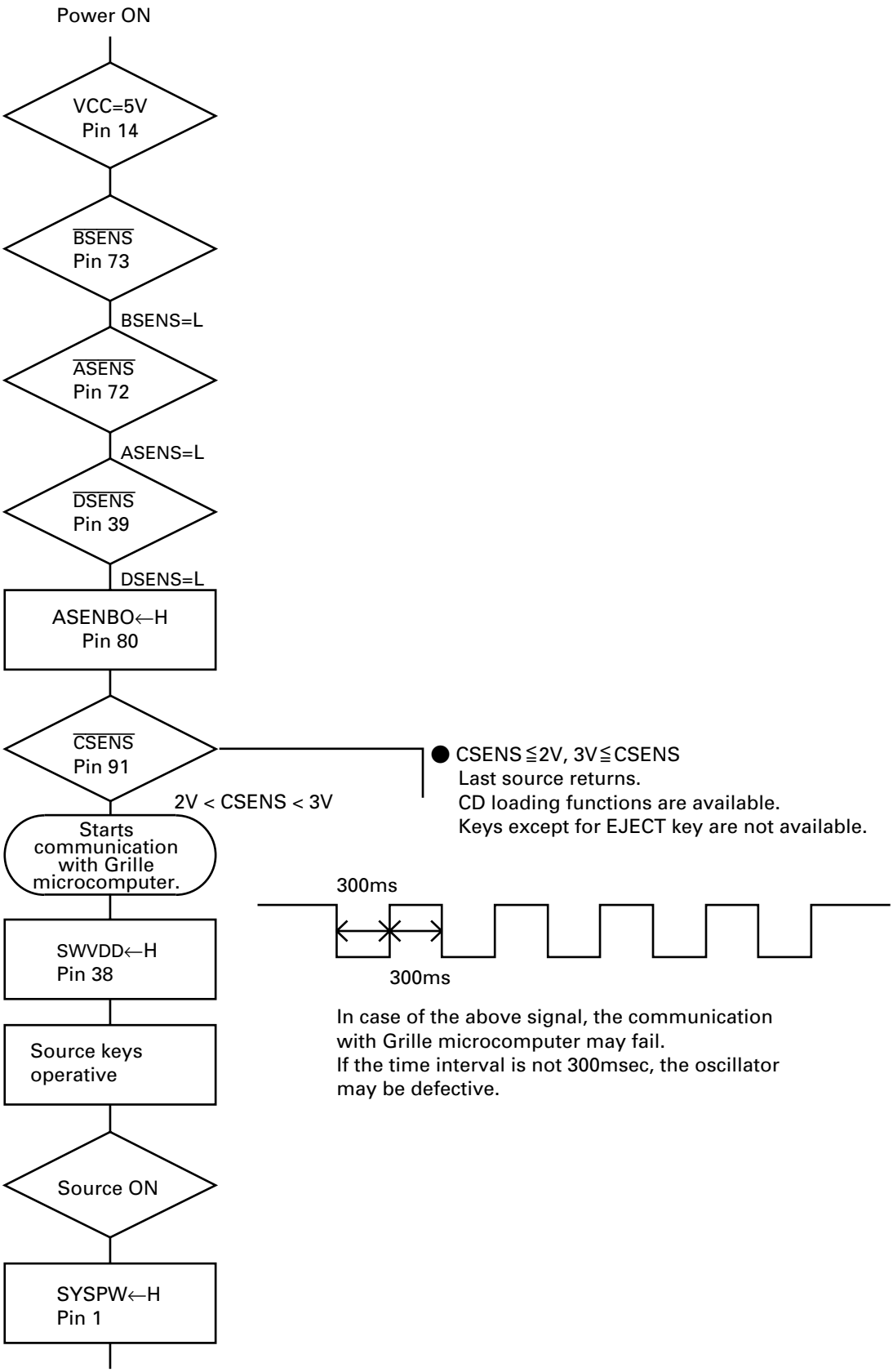
No.	Symbol	I/O	Explain	
1	AMANT	I	AM antenna input	AM antenna input high impedance AMANT pin is connected with an all antenna by way of 4.7μH. (LAU type inductor) A series circuit including an inductor and a resistor is connected with RF ground for the countermeasure against the ham of power transmission line.
2	RFGND		RF ground	Ground of antenna block
3	FMANT	I	FM antenna input	Input of FM antenna 75Ω Surge absorber(DSP-201M-S00B) is necessary.
4	VCC		power supply	The power supply for analog block. D.C 8.4V ± 0.3V
5	SL	O	signal level	Output of FM/AM signals level
6	CE2	I	chip enable-2	Chip enable for EEPROM "Low" active
7	WC	I	write control	You can write EEPROM, when EEPROM write control is "Low". Ordinary non connection
8	CE1	I	chip enable-1	Chip enable for AF•RF "High" active
9	CK	I	clock	Clock
10	DI	I	data in	Data input
11	NC		non connection	Not used
12	OSCGND		osc ground	Ground of oscillator block
13	ROM_VDD		power supply	Power supply for EEPROM pin 13 is connected with a power supply of micro computer.
14	DO	O	data out	Data output
15	DGND		digital ground	Ground of digital block
16	NC		non connection	Not used
17	VDD_3.3		power supply	The power supply for digital block. 3.3V ± 0.2V
18	NC		non connection	Not used
19	NC		non connection	Not used
20	NC		non connection	Not used
21	NC		non connection	Not used
22	AUDIOGND		audio ground	Ground of audio block
23	L ch	O	L channel output	FM stereo "L-ch" signal output or AM audio output
24	R ch	O	R channel output	FM stereo "R-ch" signal output or AM audio output

7.2.2 DISPLAY

● **LCD(CAW1755)**



7.3 OPERATIONAL FLOW CHART

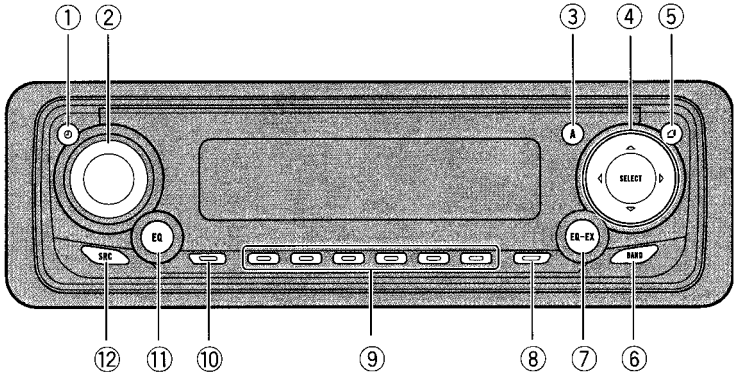


Completes power-on operation.
(After that, proceed to each source operation)

7.4 CLEANING

Before shipping out the product, be sure to clean the following portions by using the prescribed cleaning tools:

Portions to be cleaned	Cleaning tools
CD pickup lenses	Cleaning liquid : GEM1004 Cleaning paper : GED-008



Head unit

① **CLOCK button**
Press to change to the clock display.

② **VOLUME**
When you press **VOLUME**, it extends outward so that it becomes easier to turn. To retract **VOLUME**, press it again. Rotate to increase or decrease the volume.

③ **AUDIO button**
Press to select various sound quality controls.

④ **▲/▼/◄/► buttons**
Press to do manual seek tuning, fast forward, reverse and track search controls. Also used for controlling functions.

⑤ **OPEN button**
Press to open the front panel.

⑥ **BAND button**
Press to select among three FM and one AM bands and cancel the control mode of functions.

⑦ **EQ-EX button**
Press and hold to switch between EQ-EX and SFEQ functions. Press to operate each function.

⑧ **FUNCTION button**
Press to select functions.

⑨ **1–6 buttons**
Press for preset tuning and disc number search when using a multi-CD player.

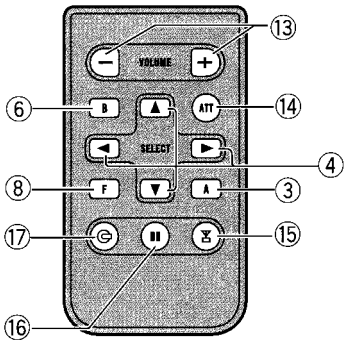
⑩ **DISPLAY button**
Press to select different displays.

⑪ **EQ button**
Press to select various equalizer curves.

⑫ **SOURCE button**
This unit is turned on by selecting a source. Press to cycle through all of the available sources. ▣

Remote control

Operation is the same as when using the button on the head unit.



⑬ **VOLUME button**
Press to increase or decrease the volume.

⑭ **ATT button**
Press to quickly lower the volume level, by about 90%. Press once more to return to the original volume level.

⑮ **TUNER button**
Press to select the tuner as the source.

⑯ **PAUSE button**
Press to turn pause on or off.

⑰ **CD button**
Press to select the built-in or multi-CD player as the source. ▣

Turning the unit on

● **Press SOURCE to turn the unit on.**
When you select a source the unit is turned on. ▣

Selecting a source

You can select a source you want to listen to. To switch to the built-in CD player, load a disc in this unit.

● **When using the head unit, press SOURCE to select a source.**
Press **SOURCE** repeatedly to switch between the following sources:
XM tuner—Tuner—Television—Built-in CD player—Multi-CD player—External unit 1—External unit 2—AUX

● **When using the remote control, press TUNER or CD to select a source.**
Press each button repeatedly to switch between the following sources:
TUNER: **Television—Tuner—XM tuner—Sources off**
CD: **Built-in CD player—Multi-CD player—Sources off**

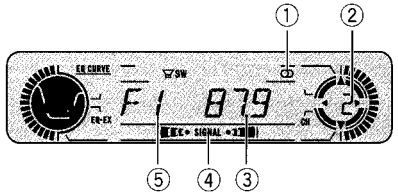
Notes

- In the following cases, the sound source will not change:
  - — When a unit corresponding to each source is not connected to this unit.
  - — When no disc is set in this unit.
  - — When no magazine is set in the multi-CD player.
  - — When the AUX (auxiliary input) is set to off
- External unit refers to a Pioneer product (such as one available in the future) that, although incompatible as a source, enables control of basic functions by this unit. Two external units can be controlled by this unit. When two external units are connected, the allocation of them to external unit 1 or external unit 2 is automatically set by this unit.
- When this unit's blue/white lead is connected to the car's auto-antenna relay control terminal, the car's antenna extends when this unit's source is turned on. To retract the antenna, turn the source off. ▣

Turning the unit off

● **Press SOURCE and hold until the unit turns off.** ▣

Listening to the radio



These are the basic steps necessary to operate the radio.

① **Stereo (◯) indicator**
Shows that the frequency selected is being broadcast in stereo.

② **Preset number indicator**
Shows what preset has been selected.

③ **Frequency indicator**
Shows to which frequency the tuner is tuned.

④ **Signal level indicator**
Shows the radio wave strength.

⑤ **Band indicator**
Shows which band the radio is tuned to, AM or FM.

1 Press SOURCE to select the tuner.
Press **SOURCE** until you see **TUNER** displayed.

2 Use VOLUME to adjust the sound level.
Rotate to increase or decrease the volume.

3 Press BAND to select a band.
Press **BAND** until the desired band is displayed, **F1**, **F2**, **F3** for FM or **AM**.

4 To perform manual tuning, press ◄ or ► with quick presses.
The frequencies move up or down step by step.

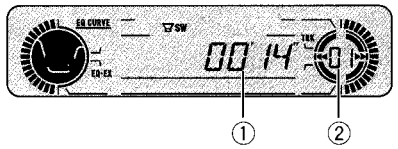
5 To perform seek tuning, press and hold ◄ or ► for about one second and release.
The tuner will scan the frequencies until a broadcast strong enough for good reception is found.

- You can cancel seek tuning by pressing either ◄ or ► with a quick press.
- If you press and hold ◄ or ► you can skip broadcasting stations. Seek tuning starts as soon as you release the buttons.

Note

When the frequency selected is being broadcast in stereo the stereo (◯) indicator will light. ▣

Playing a CD



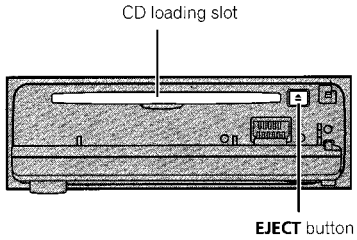
These are the basic steps necessary to play a CD with your built-in CD player.

① **Play time indicator**
Shows the elapsed playing time of the current track.

② **Track number indicator**
Shows the track currently playing.

1 Press OPEN to open the front panel.
CD loading slot appears.
- After a CD has been inserted, press **SOURCE** to select the built-in CD player.

2 Insert a CD into the CD loading slot.
Playback will automatically start.



- You can eject a CD by pressing **EJECT**.
- To avoid a malfunction, make sure that no metal object comes into contact with the terminals when the front panel is open.

3 Close the front panel.

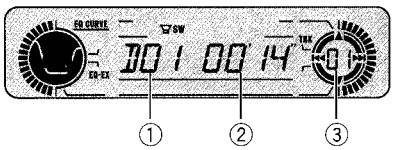
4 Use VOLUME to adjust the sound level.
Rotate to increase or decrease the volume.

5 To perform fast forward or reverse, press and hold ◄ or ►.

6 To skip back or forward to another track, press ◄ or ►.
Pressing ► skips to the start of the next track. Pressing ◄ once skips to the start of the current track. Pressing again will skip to the previous track.

Notes
- The built-in CD player plays one, standard, 12-cm or 8-cm (single) CD at a time. Do not use an adapter when playing 8-cm CDs.
- Do not insert anything other than a CD into the CD loading slot.
- If you cannot insert a disc completely or if after you insert a disc the disc does not play, check that the label side of the disc is up. Press **EJECT** to eject the disc, and check the disc for damage before inserting the disc again.
- If the built-in CD player does not operate properly, an error message such as **ERROR-11** may be displayed.
- When a CD TEXT disc is inserted, the disc and track titles begin to scroll to the left automatically. ▣

Playing a CD



You can use this unit to control a multi-CD player, which is sold separately.
These are the basic steps necessary to play a CD with your multi-CD player.

- If the multi-CD player does not operate properly, an error message such as **ERROR-11** may be displayed. Refer to the multi-CD player owner's manual.
- If there are no discs in the multi-CD player magazine, **NO DISC** is displayed.
- When you select a CD TEXT disc on a CD TEXT compatible multi-CD player, the disc and track titles begin to scroll to the left automatically. ▣

50-disc multi-CD player

Only those functions described in this manual are supported for 50-disc multi-CD players. ▣

4 To perform fast forward or reverse, press and hold ◄ or ►.

5 To skip back or forward to another track, press ◄ or ►.
Pressing ► skips to the start of the next track. Pressing ◄ once skips to the start of the current track. Pressing again will skip to the previous track.

Notes
- When the multi-CD player performs the preparatory operations, **READY** is displayed.

① **Disc number indicator**
Shows the disc currently playing.

② **Play time indicator**
Shows the elapsed playing time of th
rent track.

③ **Track number indicator**
Shows the track currently playing.

1 Press SOURCE to select the multi-player.
Press **SOURCE** until you see **MULTI CD** played.

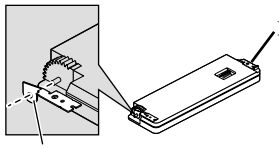
2 Use VOLUME to adjust the sound
Rotate to increase or decrease the volu

3 Select a disc you want to listen t the 1–6 buttons.
For discs located at 1 to 6, press the co sponding number button.
If you want to select a disc located at 7 press and hold the corresponding num such as **1** for disc 7, until the disc numl pears in the display.
- You can also sequentially select a disc pressing ▲/▼.

Fixing the Front Panel

If you do not operate the Detaching and Replacing the Front Panel Function, use the supplied fixing screws and fix the front panel to this unit.

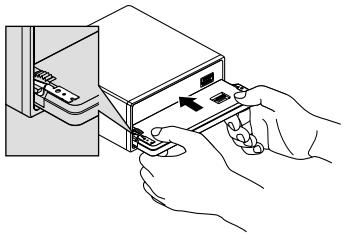
1. Attach the holders to both sides of the front panel.



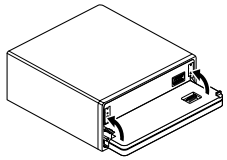
Holder CND1250(UC)
CXX1645(ES)

Holder CND1249(UC)
CXX1644(ES)

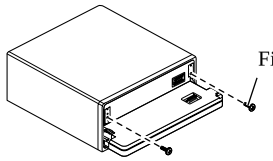
2. Replace the front panel to the unit.



3. Flip the holders into upright positions.

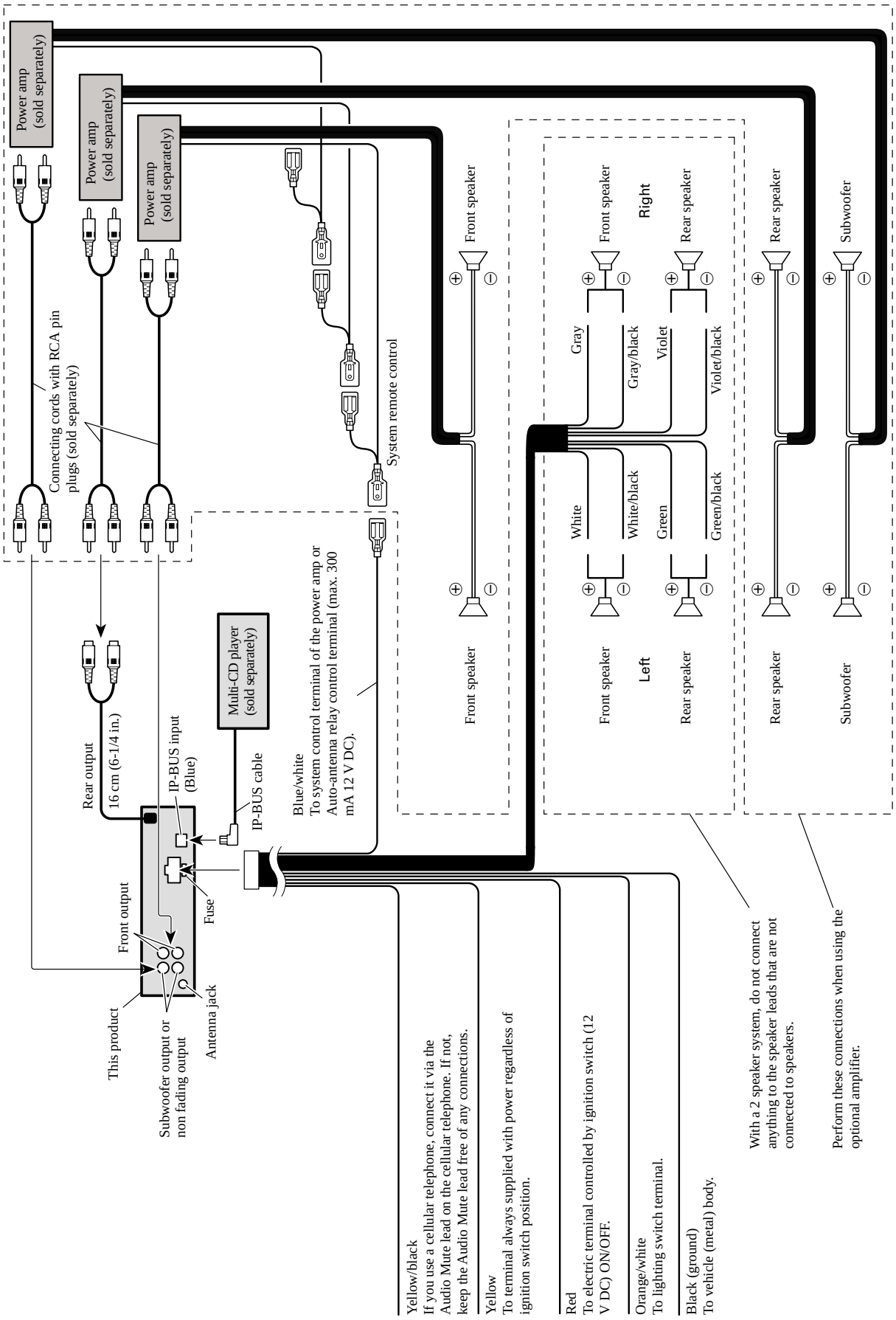


4. Fix the front panel to the unit using fixing screws.

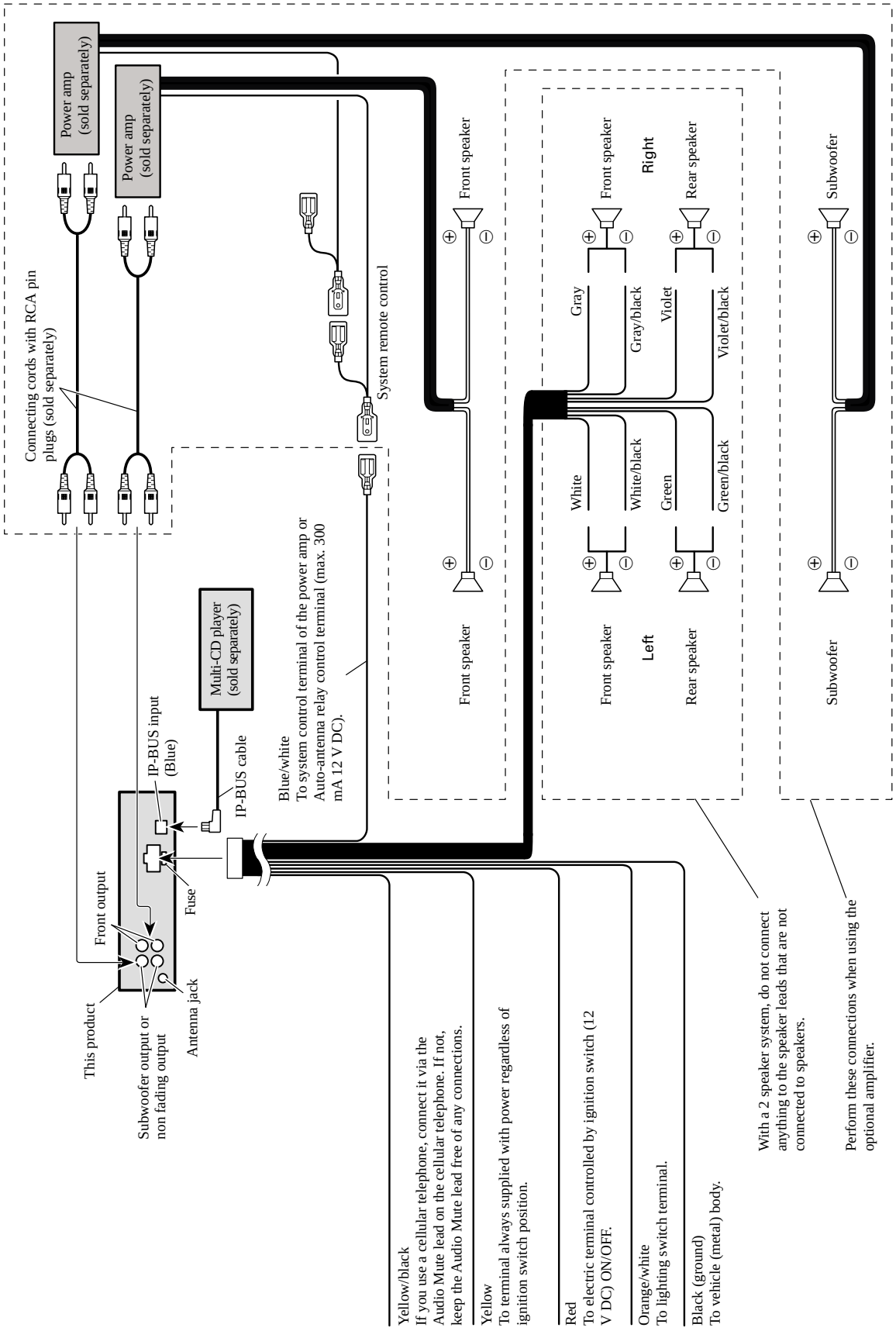


Fixing screw BPZ20P060FZK(UC)
CXX1646(ES)

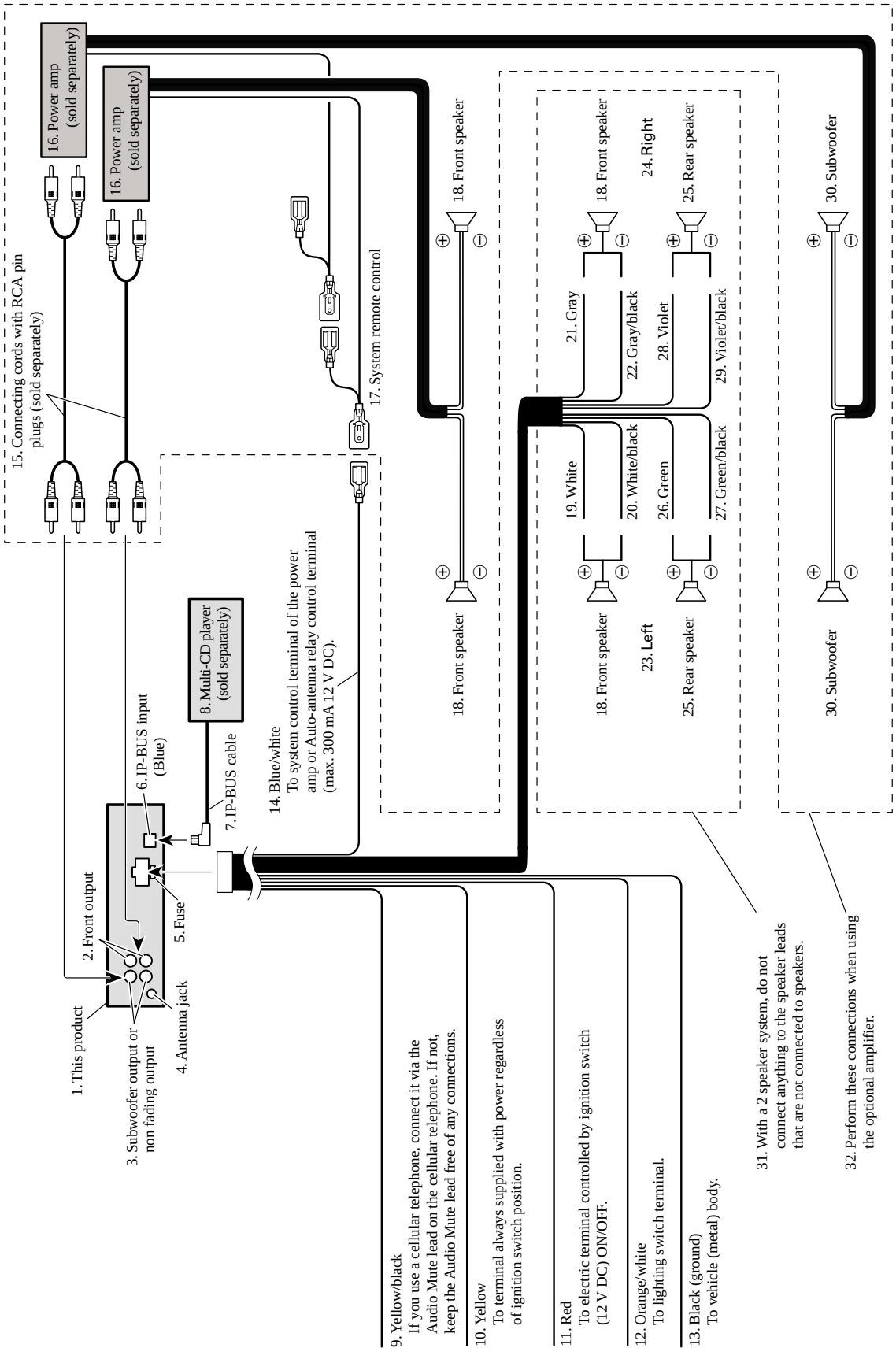
● DEH-P350/XM/UC, DEH-P350/XN/UC



● DEH-P3500/XM/UC, DEH-P3500/XN/UC


Power amp (sold separately)
Power amp (sold separately)
Connecting cords with RCA pin plugs (sold separately)
System remote control
Front speaker
Front speaker
Front speaker
Right
Rear speaker
Subwoofer
Gray
Gray/black
Violet
Violet/black
White
White/black
Green
Green/black
Front speaker
Left
Rear speaker
Subwoofer
Multi-CD player (sold separately)
IP-BUS input (Blue)
IP-BUS cable
Blue/white
To system control terminal of the power amp or Auto-antenna relay control terminal (max. 300 mA 12 V DC).
Front output
Fuse
This product
Subwoofer output or non fading output
Antenna jack
Yellow/black
If you use a cellular telephone, connect it via the Audio Mute lead on the cellular telephone. If not, keep the Audio Mute lead free of any connections.
Yellow
To terminal always supplied with power regardless of ignition switch position.
Red
To electric terminal controlled by ignition switch (12 V DC) ON/OFF.
Orange/white
To lighting switch terminal.
Black (ground)
To vehicle (metal) body.
With a 2 speaker system, do not connect anything to the speaker leads that are not connected to speakers.
Perform these connections when using the optional amplifier.

● DEH-P4550/XM/ES, DEH-P4550/XN/ES


16. Power amp (sold separately)
16. Power amp (sold separately)
15. Connecting cords with RCA pin plugs (sold separately)
17. System remote control
18. Front speaker
18. Front speaker
18. Front speaker
24. Right
25. Rear speaker
30. Subwoofer
21. Gray
22. Gray/black
28. Violet
29. Violet/black
19. White
20. White/black
26. Green
27. Green/black
18. Front speaker
23. Left
25. Rear speaker
30. Subwoofer
8. Multi-CD player (sold separately)
6. IP-BUS input (Blue)
7. IP-BUS cable
14. Blue/white
To system control terminal of the power amp or Auto-antenna relay control terminal (max. 300 mA 12 V DC).
2. Front output
5. Fuse
1. This product
3. Subwoofer output or non fading output
4. Antenna jack
9. Yellow/black
If you use a cellular telephone, connect it via the Audio Mute lead on the cellular telephone. If not, keep the Audio Mute lead free of any connections.
10. Yellow
To terminal always supplied with power regardless of ignition switch position.
11. Red
To electric terminal controlled by ignition switch (12 V DC) ON/OFF.
12. Orange/white
To lighting switch terminal.
13. Black (ground)
To vehicle (metal) body.
31. With a 2 speaker system, do not connect anything to the speaker leads that are not connected to speakers.
32. Perform these connections when using the optional amplifier.